Symphonic FUNAI

SYLVANIA Emerson®

SERVICE MANUAL

Sec. 1: Main Section
- Specifications
- Preparation for Servicing
- Adjustment Procedures
- Schematic Diagrams
- CBA's

Sec. 2: Deck Mechanism Section
- Standard Maintenance
- Alignment for Mechanism
- Disassembly/Assembly of Mechanism

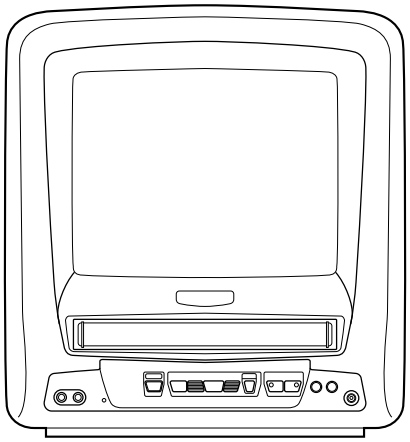
Sec. 3: Exploded views and Parts List Section
- Exploded views
- Parts List

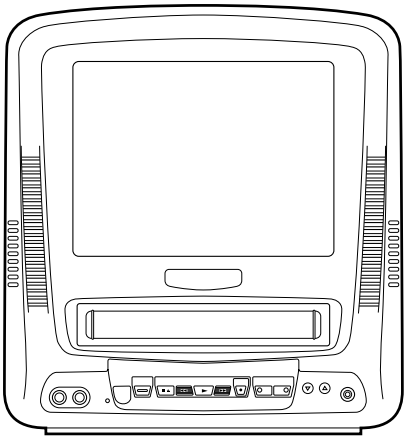
9" COLOR TV/VCR COMBINATION

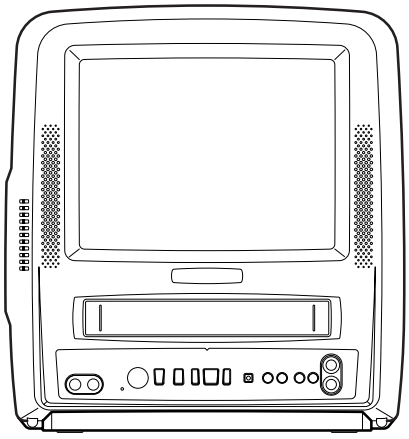
SC309C/
※F3809U (F3809C)/
6309CC

EWC0902

SSC092







※ The data for F3809U in this manual is for both F3809U and F3809C.
The parts list shown for F3809U in this manual are the same as F3809C.
The parts that are different between F3809U and F3809C are shown below.

Ref. No.	Description	Part No.	
		F3809C	F3809U
S1	CARTON	0EM407116	0EM407462
S4	SERIAL NO. LABEL	0EM407064	0EM407463
X2 ⚠	OWNER'S MANUAL	0EMN01910	0EMN01999

IMPORTANT SAFETY NOTICE

Proper service and repair is important to the safe, reliable operation of all Funai Equipment. The service procedures recommended by Funai and described in this service manual are effective methods of performing service operations. Some of these service special tools should be used when and as recommended.

It is important to note that this service manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Funai could not possibly know, evaluate and advice the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Funai has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Funai must first use all precautions thoroughly so that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

MAIN SECTION

9" COLOR TV/VCR COMBINATION

SC309C/F3809U/6309CC /EWC0902/SSC092

Sec. 1: Main Section

- **Specifications**
- **Preparation for Servicing**
- **Adjustment Procedures**
- **Schematic Diagrams**
- **CBA's**

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SPECIFICATIONS

✳Mode---------SP mode unless otherwise specified
✳Test input terminal
<Except Tuner>----------Video input (1Vp-p)
Audio input (-10dB)
<Tuner>----------Ant. input (80dBμV) Video: 87.5%
Audio: 25kHz dev (1kHz Sin)

<DEFLECTION>

Description	Condition	Unit	Nominal	Limit
1. Over Scan	—	%	90	±5
2. Linearity	Horizontal	%	—	12
	Vertical	%	—	10
3. High Voltage	—	kV	18	—

<VIDEO & CHROMA>

Description	Condition	Unit	Nominal	Limit
1. Misconvergence	Center	m/m	—	0.3
	Corner	m/m	—	1.5
	Side	m/m	—	1.2
2. Tint Control Range	—	deg	±30	—
3. Contrast Control Range	—	dB	6	—
4. Brightness	APL 100%	ft-L	30	—
5. Color Temperature	—	K	9200	—

<VCR>

Description	Condition	Unit	Nominal	Limit
1. Horizontal Resolution	(R/P)	Line	230	200
2. Jitter (Low)	(R/P)	μS	0.05	0.2
3. S/N Chroma AM(SP)	(R/P)	dB	38	33
PM(SP)	(R/P)	dB	36	33
4. Wow & Flutter (RMS)	(R/P)	%	0.25	0.5

<TUNER>

Description	Condition	Unit	Nominal	Limit
1. Video S/N	—	dB	45	40
2. Audio S/N (W/LPF)	—	dB	43	40

<AUDIO>

All items are measured across 8Ω resistor at speaker output terminal.

Description	Condition	Unit	Nominal	Limit
1. Audio Output Power (Max.)	(R/P)	W	0.8	0.6
2. Audio S/N (W/LPF)	(R/P)	dB	40	36
3. Audio Distortion (W/LPF)	(R/P)	%	3.0	5.0
4. Audio Freq. Response (-10dB Ref. 1KHz)	200Hz (R/P) 8kHz (R/P)	dB dB	-2.0 0	-2.0±5.0 0±6.0

Note: Nominal specifications represent the design specifications. All units should be able to approximate these. Some will exceed and some may drop slightly below these specifications. Limit specifications represent the absolute worst condition that still might be considered acceptable. In no case should a unit fail to meet limit specifications.

IMPORTANT SAFETY PRECAUTIONS

Prior to shipment from the factory, our products are strictly inspected for recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Safety Precautions for TV Circuit

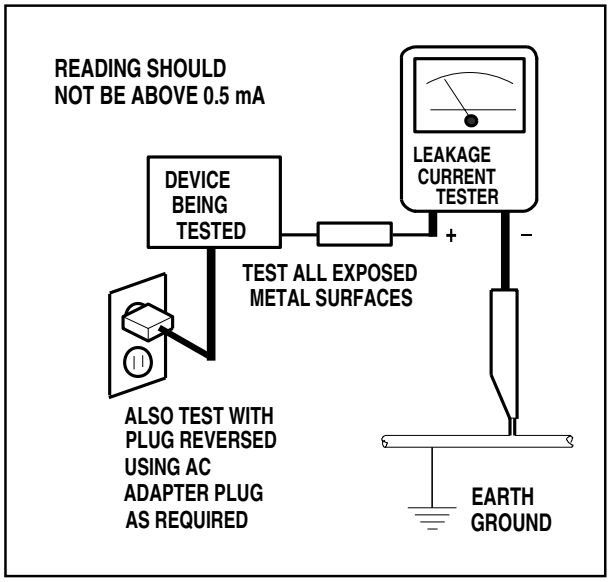
1. **Before returning an instrument to the customer,** always make a safety check of the entire instrument, including, but not limited to, the following items:

a. Be sure that no built-in protective devices are defective and have been defeated during servicing. (1) Protective shields are provided on this chassis to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience. (2) When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including but not limited to, nonmetallic control knobs, insulating fishpapers, adjustment and compartment covers/shields, and isolation resistor/capacitor networks. **Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning. Servicers who defeat safety features or fail to perform safety checks may be liable for any resulting damage.**

b. Be sure that there are no cabinet openings through which an adult or child might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to, (1) spacing between the picture tube and the cabinet mask, (2) excessively wide cabinet ventilation slots, and (3) an improperly fitted and/or incorrectly secured cabinet back cover.

c. Antenna Cold Check - With the instrument AC plug removed from any AC source, connect an electrical jumper across the two AC plug prongs. Place the instrument AC switch in the on position. Connect one lead of an ohmmeter to the AC plug prongs tied together and touch the other ohmmeter lead in turn to each tuner antenna input exposed terminal screw and, if applicable, to the coaxial connector. If the measured resistance is less than 1.0 megohm or greater than 5.2 megohm, an abnormality exists that must be corrected before the instrument is returned to the customer. Repeat this test with the instrument AC switch in the off position.

d. Leakage Current Hot Check - With the instrument completely reassembled, plug the AC line cord directly into a 120V AC outlet. (Do not use an isolation transformer during this test.) Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI) C101.1 Leakage Current for Appliances and Underwriters Laboratories (UL) 1410, (50.7). With the instrument AC switch first in the on position and then in the off position, measure from a known earth ground (metal water pipe, conduit, etc.) to all exposed metal parts of the instrument (antennas, handle brackets, metal cabinet, screw heads, metallic overlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 0.5 milli-ampere. Reverse the instrument power cord plug in the outlet and repeat the test.



ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE INSTRUMENT TO THE CUSTOMER OR BEFORE CONNECTING THE ANTENNA OR ACCESSORIES.

e. X-Radiation and High Voltage Limits - Because the picture tube is the primary potential source of X-radiation in solid-state TV receivers, it is specially constructed to prohibit X-radiation emissions. For continued X-radiation protection, the replacement picture tube must be the same type as the original. Also, because the picture tube shields and mounting hardware perform an X-radiation protection function, they must be correctly in place. High voltage must be measured each time servic-

ing is performed that involves B+, horizontal deflection or high voltage. Correct operation of the X-radiation protection circuits also must be reconfirmed each time they are serviced. (X-radiation protection circuits also may be called "horizontal disable" or "hold down.") Read and apply the high voltage limits and, if the chassis is so equipped, the X-radiation protection circuit specifications given on instrument labels and in the Product Safety & X-Radiation Warning note on the service data chassis schematic. High voltage is maintained within specified limits by close tolerance safety-related components/adjustments in the high-voltage circuit. If high voltage exceeds specified limits, check each component specified on the chassis schematic and take corrective action.

2. Read and comply with all caution and safety-related notes on or inside the receiver cabinet, on the receiver chassis, or on the picture tube.

3. **Design Alteration Warning -** Do not alter or add to the mechanical or electrical design of this TV receiver. Design alterations and additions, including, but not limited to circuit modifications and the addition of items such as auxiliary audio and/or video output connections, might alter the safety characteristics of this receiver and create a hazard to the user. Any design alterations or additions will void the manufacturer's warranty and may make you, the servicer, responsible for personal injury or property damage resulting therefrom.

4. **Picture Tube Implosion Protection Warning -** The picture tube in this receiver employs integral implosion protection. For continued implosion protection, replace the picture tube only with one of the same type number. Do not remove, install, or otherwise handle the picture tube in any manner without first putting on shatterproof goggles equipped with side shields. People not so equipped must be kept safely away while picture tubes are handled. Keep the picture tube away from your body. Do not handle the picture tube by its neck. Some "in-line" picture tubes are equipped with a permanently attached deflection yoke; because of potential hazard, do not try to remove such "permanently attached" yokes from the picture tube.

5. **Hot Chassis Warning -**

a. Some TV receiver chassis are electrically connected directly to one conductor of the AC power cord and maybe safety-serviced without an isolation transformer only if the AC power plug is inserted so that the chassis is connected to the ground side of the AC power source. To confirm that the AC power plug is inserted correctly, with an AC voltmeter, measure between the chassis and a known earth ground. If a voltage reading in excess of 1.0V is obtained, remove and reinsert the AC power plug in the opposite polarity and again measure the voltage potential between the chassis and a known earth ground.

b. Some TV receiver chassis normally have 85V AC(RMS) between chassis and earth ground regardless of the AC plug polarity. This chassis can be safety-serviced only with an isolation transformer inserted in the power line between the receiver and the AC power source, for both personnel and test equipment protection.

c. Some TV receiver chassis have a secondary ground system in addition to the main chassis ground. This secondary ground system is not isolated from the AC power line. The two ground systems are electrically separated by insulation material that must not be defeated or altered.

6. Observe original lead dress. Take extra care to assure correct lead dress in the following areas: a. near sharp edges, b. near thermally hot parts-be sure that leads and components do not touch thermally hot parts, c. the AC supply, d. high voltage, and e. antenna wiring. Always inspect in all areas for pinched, out of place, or frayed wiring. Check AC power cord for damage.

7. Components, parts, and/or wiring that appear to have overheated or are otherwise damaged should be replaced with components, parts, or wiring that meet original specifications. Additionally, determine the cause of overheating and/or damage and, if necessary, take corrective action to remove any potential safety hazard.

8. **Product Safety Notice -** Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc.. Parts that have special safety characteristics are identified by a (⚠) on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The Product's Safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are strictly inspected to confirm with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Precautions during Servicing

A. Parts identified by the (⚠) symbol are critical for safety.

Replace only with part number specified.

B. In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements.

Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.

C. Use specified internal wiring. Note especially:

1) Wires covered with PVC tubing
2) Double insulated wires
3) High voltage leads

D. Use specified insulating materials for hazardous live parts. Note especially:

1) Insulation Tape
2) PVC tubing
3) Spacers
4) Insulators for transistors.

E. When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.

F. Observe that the wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

G. Check that replaced wires do not contact sharp edged or pointed parts.

H. When a power cord has been replaced, check that 5~6 kg of force in any direction will not loosen it.

I. Also check areas surrounding repaired locations.

J. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

K. Crimp type wire connector

When replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, in order to prevent shock hazards, perform carefully and precisely the following steps.

Replacement procedure

1) Remove the old connector by cutting the wires at a point close to the connector.

   Important: Do not re-use a connector (discard it).

2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.
3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.
4) Use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

L. When connecting or disconnecting the VCR connectors, first, disconnect the AC plug from AC supply socket.

Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See Fig. 1)

Table 1 : Ratings for selected area

AC Line Voltage	Region	Clearance Distance (d) (d')
110 to 130 V	USA or CANADA	≥ 3.2 mm (0.126 inches)

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

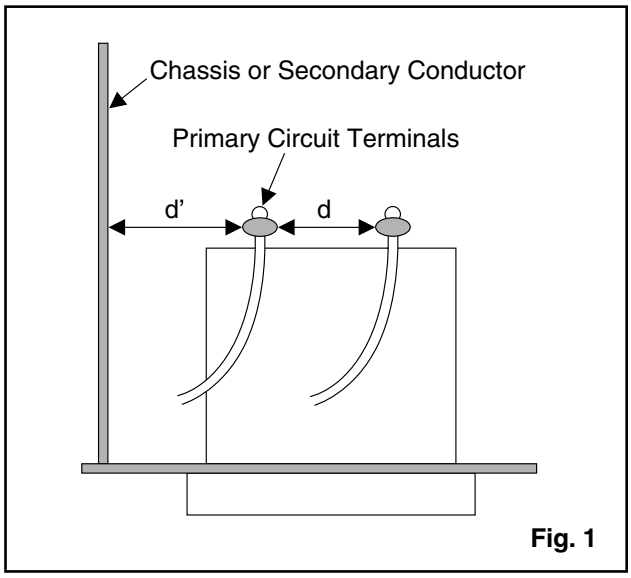


Fig. 1

2. Leakage Current Test

Confirm the specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method : (Power ON)

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See Fig. 2 and following table.

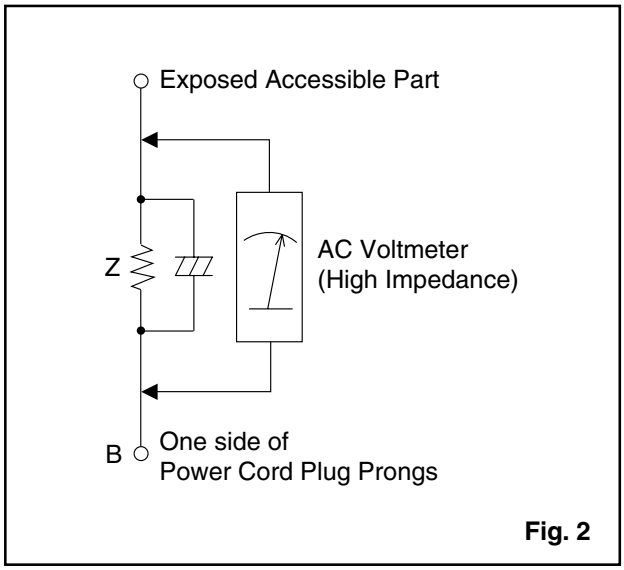


Fig. 2

Table 2 : Leakage current ratings for selected areas

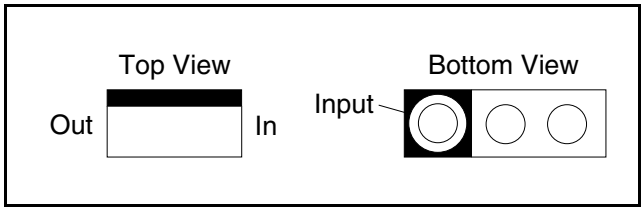
AC Line Voltage	Region	Load Z	Leakage Current (i)	Earth Ground (B) to:
110 to 130 V	USA or CANADA	0.15μF CAP. & 1.5kΩ RES. connected in parallel	i≤0.5mA rms	Exposed accessible parts

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

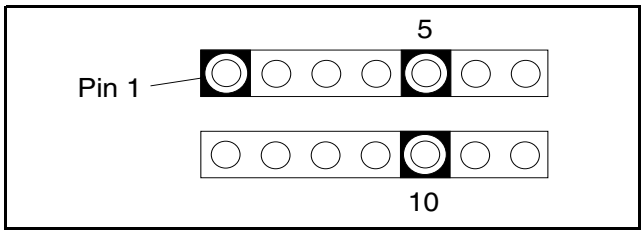
STANDARD NOTES FOR SERVICING

Circuit Board Indications

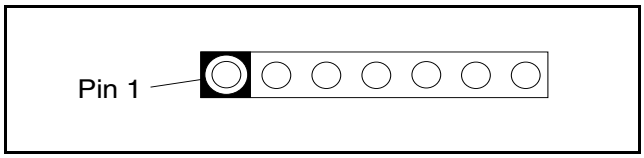
1. The output pin of the 3 pin Regulator ICs is indicated as shown:



2. For other ICs, pin 1 and every 5th pin is indicated as shown:

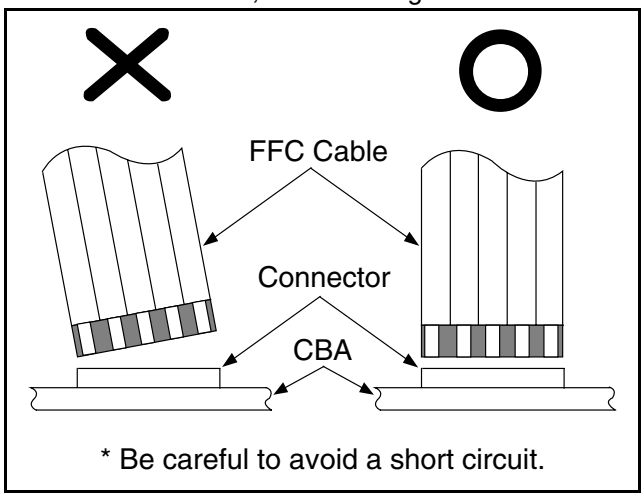


3. The 1st pin of every pin connector are indicated as shown:



Instructions for Connectors

1. When you connect or disconnect FFC cable (connector), be sure to disconnect the AC cord.
2. FFC cable (connector) should be inserted parallel into the connector, not at an angle.



[CBA= Circuit Board Assembly]

How to Remove / Install Flat Pack IC

Caution:

3. Do not apply the hot air to the chip parts around the Flat Pack-IC for over 6 seconds as damage may occur to the chip parts. Put Masking Tape around the Flat Pack-IC to protect other parts from damage. (Fig. S-1-2)
4. The Flat Pack-IC on the CBA is affixed with glue, so be careful not to break or damage the foil of each pin or solder lands under the IC when removing it.

1. Removal

With Hot - Air Flat Pack - IC Desoldering Machine:

a. Prepare the Hot - Air Flat Pack - IC Desoldering Machine, then apply hot air to Flat Pack - IC (about 5~6 seconds). (Fig. S-1-1)

b. Remove the Flat Pack- IC with tweezers while applying the hot air.

With Soldering Iron:

a. Using desoldering braid, remove the solder from all pins of the Flat Pack - IC. When you use solder flux which is applied to all pins of the Flat Pack - IC, you can remove it easily. (Fig. S-1-3)

b. Lift each lead of the Flat Pack - IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air Desoldering Machine. (Fig. S-1-4)

With Iron Wire:

a. Using desoldering braid, remove the solder from all pins of the Flat Pack - IC. When you use solder flux which is applied to all pins of the Flat Pack - IC, you can remove it easily. (Fig. S-1-3)

b. Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.

c. Pull up on the wire as the solder melts so as to lift the IC leads from the CBA contact pads, while heating the pins using a fine tip soldering iron or hot air blower.

Note:

When using a soldering iron, care must be taken to ensure that the Flat Pack - IC is not being held by glue, or when it is removed from the CBA, it may be damaged if force is used.

2. Installation

a. Using desoldering braid, remove the solder from the foil of each pin of the Flat Pack - IC on the CBA, so you can install a replacement Flat Pack - IC more easily.

b. The "●" mark on the Flat Pack - IC indicates pin 1 (See Fig. S-1-6). Make sure this mark matches the 1 on the CBA when positioning for installation. Then pre - solder the four corners of the Flat Pack-IC (See Fig. S-1-7).

c. Solder all pins of the Flat Pack - IC. Make sure that none of the pins have solder bridges.

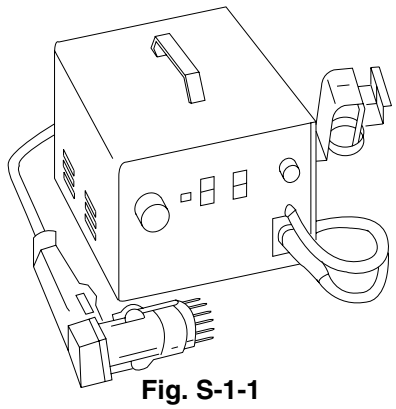


Fig. S-1-1

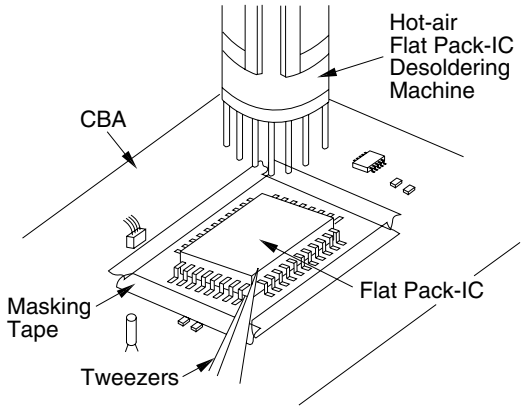


Fig. S-1-2

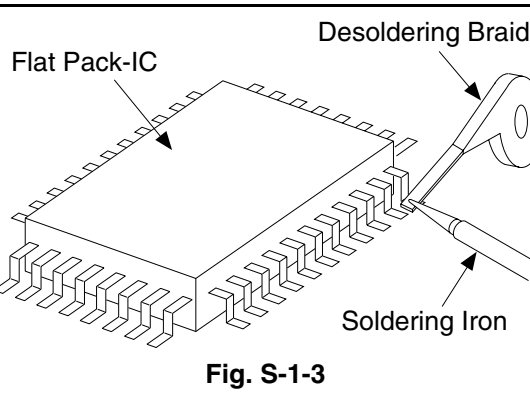


Fig. S-1-3

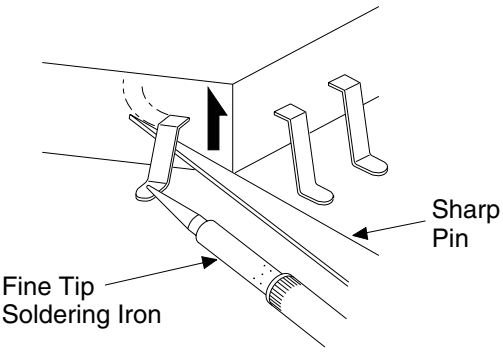


Fig. S-1-4

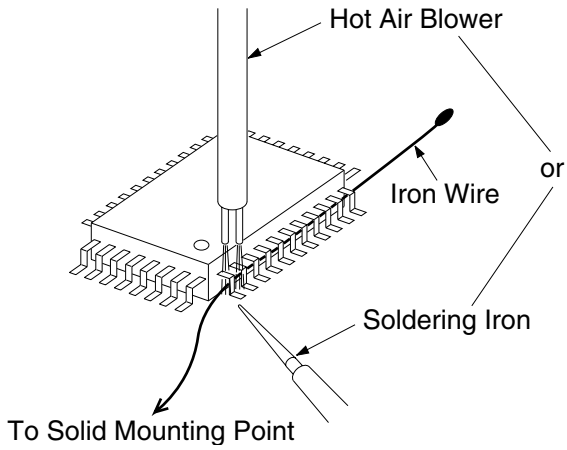


Fig. S-1-5

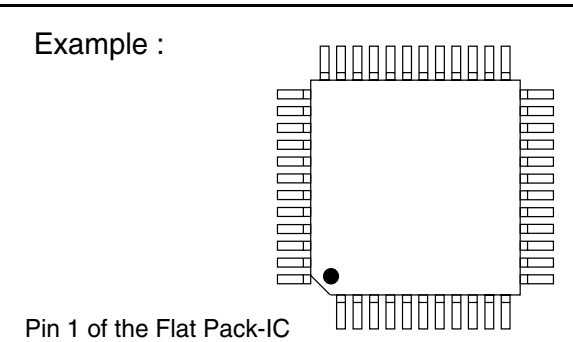


Fig. S-1-6

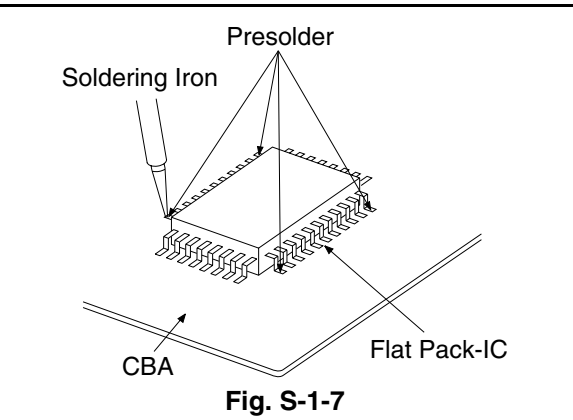


Fig. S-1-7

Instructions for Handling Semiconductors

Electrostatic breakdown of the semiconductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

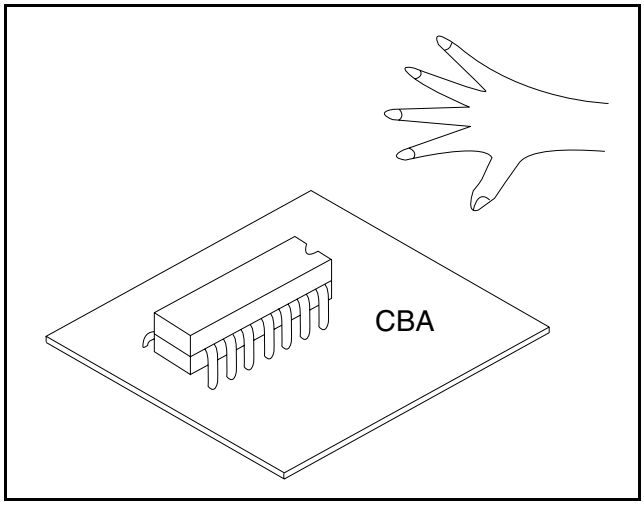
Ground for Human Body

Be sure to wear a grounding band (1MΩ) that is properly grounded to remove any static electricity that may be charged on the body.

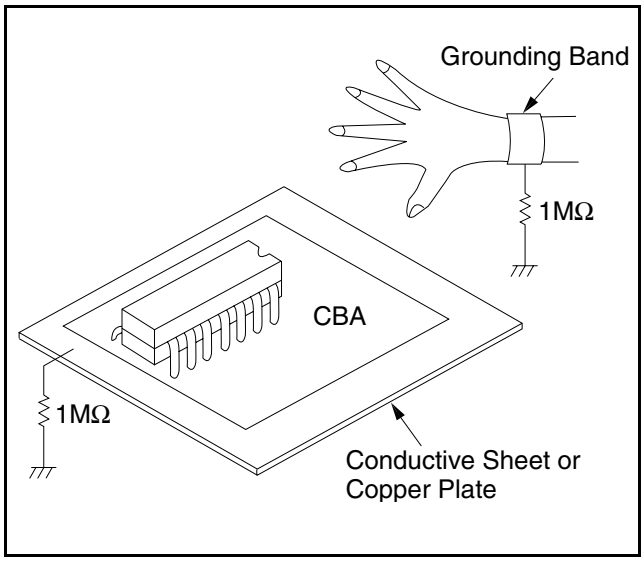
Ground for Work Bench

Be sure to place a conductive sheet or copper plate with proper grounding (1MΩ) on the work bench or other surface, where the semiconductors are to be placed. Because the static electricity charge on the clothing will not escape through the body grounding band, be careful to avoid contacting semiconductors to clothing.

Incorrect



Correct



PREPARATION FOR SERVICING

How to Enter the Service Mode

Caution: 1

1. Optical sensors system are used for Tape Start and End Sensor on this equipment. Read this page carefully and prepare as described on this page before starting to service; otherwise, the unit may operate unexpectedly.

Preparing: 1

1. Cover Q202 (START SENSOR) and Q201 (END SENSOR) with Insulation Tape or enter the service mode to activate Sensor Inhibition automatically.

Note: Avoid playing, rewinding or fast forwarding the tape to its beginning or end, because both Tape End Sensors are not active.

How to Enter the Service Mode

1. Turn power on.
2. Use service remote control unit and press WAKE-UP/SLEEP key. (See page1-7-1)
3. When entering the service mode, one of the number (1, 2 or 4) will display at corners of the screen.
4. During the service mode, electrical adjustment mode can be selected by remote control key. (Service remote control unit).

   Details are as follows.

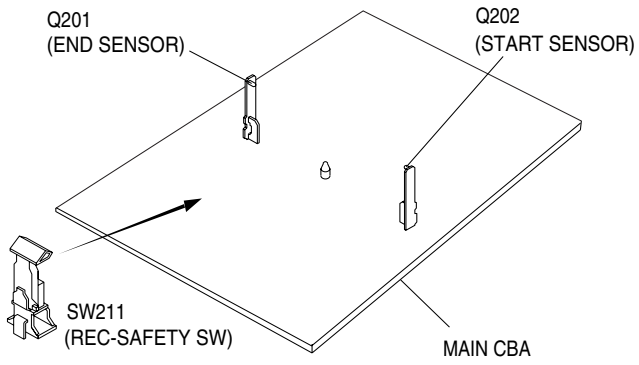
Key	Adjustment Mode
MENU	Picture adjustment mode: Press the MENU button to change from BRT (Bright), *CNT (Contrast), *CLR (Color), *TNT(Tint) and *V-T. Press CH UP/DOWN key to display Initial Value. Maximum and Minimum cyclically. *Marked items are not necessary to adjust normally.
0	C-Trap and Y DL Time adjustment mode: See adjustment instructions page 1-7-3.
1	No need to use.
2	AGC/H adjustment mode: See adjustment instructions page 1-7-2.
3	Auto AFT adjustment mode: See adjustment instructions page 1-7-2.
4	Auto record mode: Perform recording (15 Sec.)-->Stop-->Rewind (Zero return) automatically.
5	Head switching point adjustment mode: See adjustment instructions page 1-7-6.
6	**No need to use.**
7	Purity check mode: Shows Red, Green, Blue or White cyclically on the screen each time the “7” key is pressed.
8	H. Shift adjustment mode: See adjustment instructions page 1-7-4.
9	V.size/V. shift adjustment: See adjustment instructions page 1-7-4.
VOL ▼	Cut-off Adjustment 1-7-4.

Caution: 2

1. The deck mechanism assembly is mounted on the Main CBA directly, and SW211 (REC-SAFETY SW) is mounted on the Main CBA. When deck mechanism assembly is removed from the Main CBA due to servicing, this switch can not be operated automatically.

Preparing: 2

1. To eject the tape, press the STOP/EJECT button on the unit (or Remote Control).
2. When you want to record during the Service mode, press the Rec button while depressing SW211 (REC-SAFETY SW) on the Main CBA.

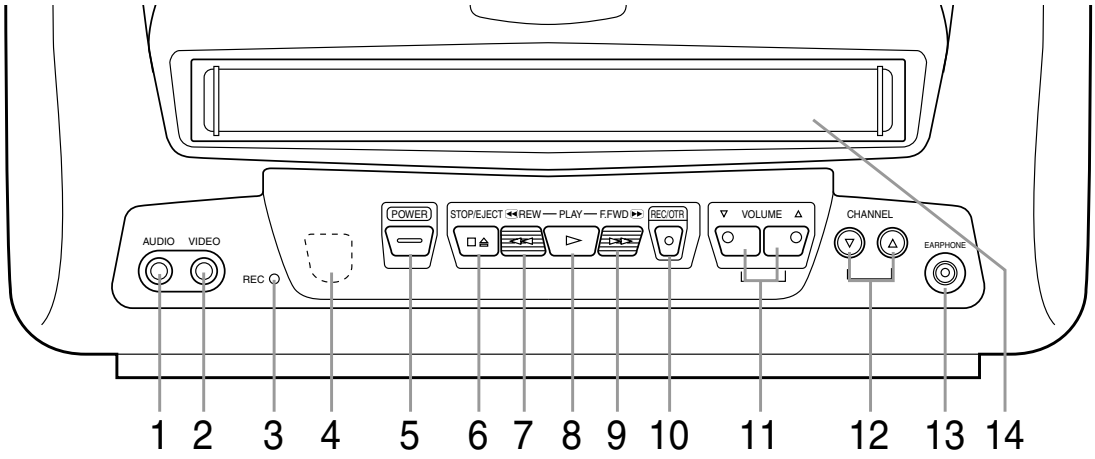


OPERATING CONTROLS AND FUNCTIONS

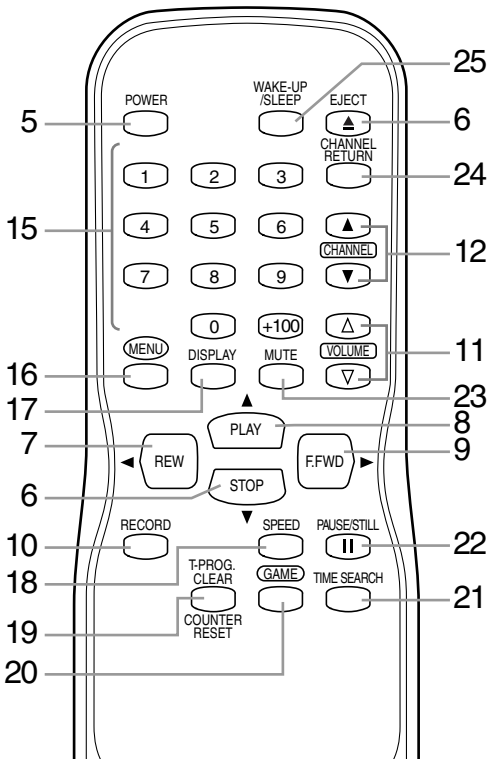
[SC309C/F3809U/6309CC/EWC0902]

The illustrations shown in this page are of SC309C/F3809U/6309CC. The operation is exactly the same.

- TV/VCR FRONT PANEL -



- REMOTE CONTROL -



1 AUDIO input jack– Connect to the audio output jack of your audio equipment, video camera or another VCR.

2 VIDEO input jack– Connect to the video output jack of your video camera or another VCR.

3 RECORD indicator– Flashes during recording. Lights up in the Stand-by mode for Timer Recording.

4 Remote Sensor Window– Receives the infrared signals from the remote control.

5 POWER button– Press to turn TV/VCR on and off. Press to activate timer recording.

6 STOP button– Press to stop the tape motion.
EJECT button– Press in the Stop mode to remove tape from TV/VCR.

▼ button–

- Press to select setting modes from the on screen menu.
- Press to enter digits when setting program. (for example: setting clock or timer program)

7 REW button– Press to rewind the tape, or to view the picture rapidly in reverse during playback mode. (Rewind Search)

◄ button–

- Press to select a mode from a particular menu. (for example: LANGUAGE or USER'S SET UP)

8 PLAY button– Press to begin playback.

▲ button–

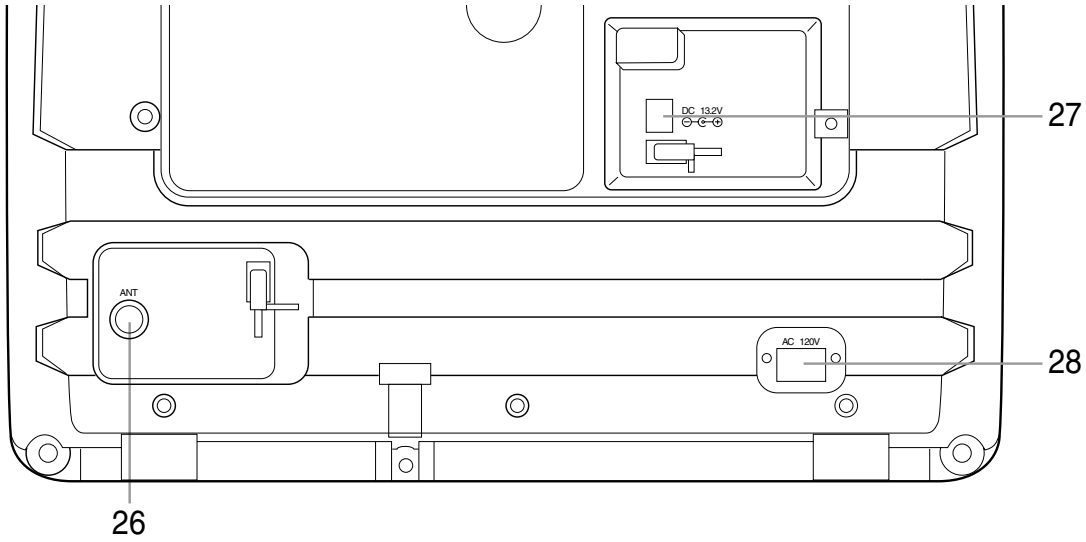
- Press to select setting modes from the on screen menu.
- Press to enter digits when setting program. (for example: setting clock or timer program)

9 F.FWD button– Press to rapidly advance the tape, or to view the picture rapidly in forward during playback mode. (Forward Search)

► button–

- When setting program (for example: setting clock or timer program), press to determine your selection and proceed to the next step you want to input.
- Press to determine setting modes from on screen menu.
- Press to select a mode from a particular menu. (for example: LANGUAGE or USER'S SET UP)

- REAR VIEW -



10 REC button– Press for manual recording.
OTR button– Activates One Touch Recording. (only on the TV/VCR)

11 VOLUME △ / ▽ buttons– Adjust the volume level.

12 CHANNEL ▲ / ▼ buttons– Press to select the desired channels for viewing or recording.
You may display the main menu on the TV screen by pressing repeatedly this button on the TV/VCR.
TRACKING function– Press to minimize video 'noise' (lines or dots on screen) during playback mode.

13 EARPHONE jack– Connects to earphones (not supplied) for personal listening. The size of jack is 1/8" monaural (3.5mm).

14 Cassette compartment

15 Number buttons– Press to select desired channels for viewing or recording. To select channels from 1 to 9, first press the 0 button and then 1 to 9.
+100 button– When selecting cable channels which are higher than 99, press this button first, then press the last two digits. (To select channel 125, first press the "+100" button then press "2" and "5".)

16 MENU button– Press to display the main menu on the TV screen.

17 DISPLAY button– Display the counter or the current channel number and current time on the TV screen.

18 SPEED button– Press to choose the desired recording speed:SP/SLP.

19 T-PROG. CLEAR button– Press to cancel a setting of timer program.
COUNTER RESET button– Press to reset counter to 0:00:00.

20 GAME button– Sets the game mode and external input mode at the same time.

21 TIME SEARCH button– Press to activate Time Search mode.

22 PAUSE/STILL button– Press to temporarily stop the tape during the recording or to view a still picture during playback.

23 MUTE button– Mutes the sound. Press it again to resume sound.

24 CHANNEL RETURN button– Press to go back to the previously viewed channel. For example, pressing this button once will change channel display from 3 (present channel) to 10 (previously viewed channel), and pressing it a second time will return from 10 to 3.

25 WAKE-UP/SLEEP button– Sets the Wake up or Sleep Timer.

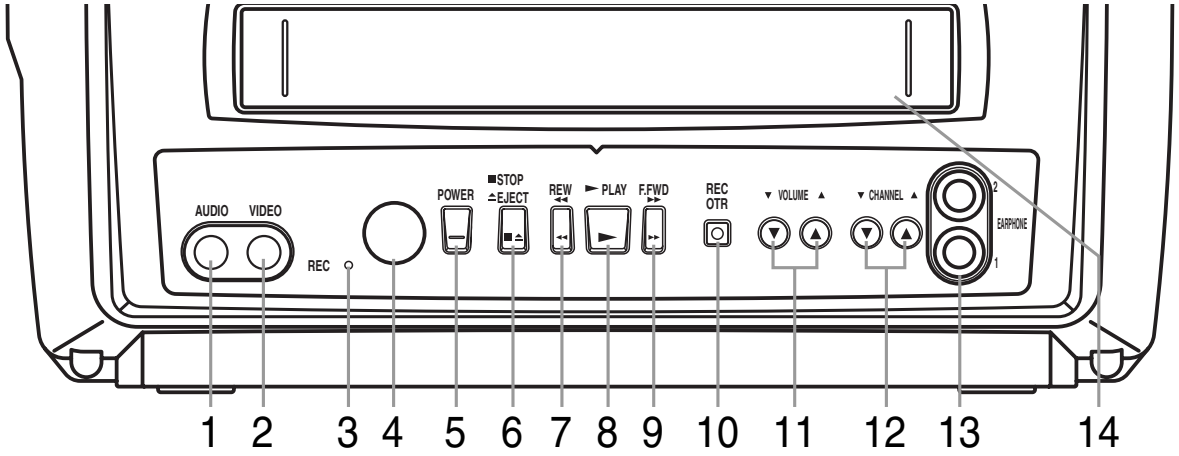
26 ANT. terminal– Connect to an antenna or cable system.

27 DC 13.2V jack– Connect to the Car Battery Cord.

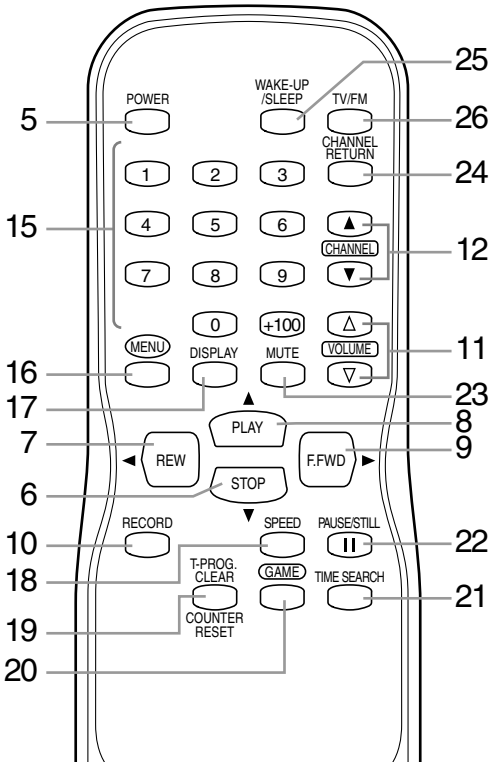
28 AC 120V jack– Connect to the AC cord.

[SSC092]

- TV/VCR FRONT PANEL -



- REMOTE CONTROL -



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2 VIDEO input jack– Connect to the video output jack of your video camera or another VCR.

3 RECORD indicator– Flashes during recording. Lights up in the Stand-by mode for Timer Recording.

4 Remote Sensor Window– Receives the infrared signals from the remote control.

5 POWER button– Press to turn TV/VCR on and off. Press to activate timer recording.

6 STOP button– Press to stop the tape motion.
EJECT button– Press in the Stop mode to remove tape from TV/VCR.

▼ button–

- Press to select setting modes from the on screen menu.
- Press to enter digits when setting program. (for example: setting clock or timer program)

7 REW button– Press to rewind the tape, or to view the picture rapidly in reverse during playback mode. (Rewind Search)

◄ button–

- Press to select a mode from a particular menu. (for example: LANGUAGE or USER'S SET UP)

8 PLAY button– Press to begin playback.

▲ button–

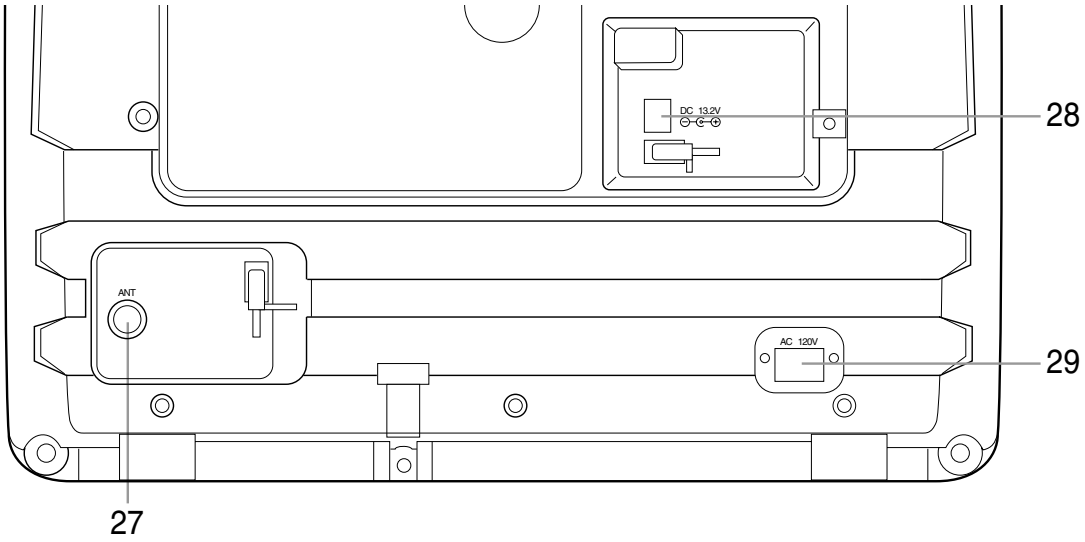
- Press to select setting modes from the on screen menu.
- Press to enter digits when setting program. (for example: setting clock or timer program)

9 F.FWD button– Press to rapidly advance the tape, or to view the picture rapidly in forward during playback mode. (Forward Search)

► button–

- When setting program (for example: setting clock or timer program), press to determine your selection and proceed to the next step you want to input.
- Press to determine setting modes from on screen menu.
- Press to select a mode from a particular menu. (for example: LANGUAGE or USER'S SET UP)

- REAR VIEW -



10 REC button– Press for manual recording.
OTR button– Activates One Touch Recording. (only on the TV/VCR)

11 VOLUME △ / ▽ buttons– Adjust the volume level.

12 CHANNEL ▲ / ▼ buttons– Press to select the desired channels for viewing or recording.
You may display the main menu on the TV screen by pressing repeatedly this button on the TV/VCR.
TRACKING function– Press to minimize video 'noise' (lines or dots on screen) during playback mode.

13 EARPHONE jacks– Connect to earphones (not supplied). The size of jack is 1/8" monaural (3.5mm).
Jack1: For personal listening.
Jack2: Sound comes out from both the earphone and the speakers.
Jack1&2: For personal listening for two (No sound comes out from the speakers).

14 Cassette compartment

15 Number buttons– Press to select desired channels for viewing or recording. To select channels from 1 to 9, first press the 0 button and then 1 to 9.
+100 button– When selecting cable channels which are higher than 99, press this button first, then press the last two digits. (To select channel 125, first press the "+100" button then press "2" and "5".)

16 MENU button– Press to display the main menu on the TV screen.

17 DISPLAY button– Display the counter or the current channel number and current time on the TV screen.

18 SPEED button– Press to choose the desired recording speed:SP/SLP.

19 T-PROG. CLEAR button– Press to cancel a setting of timer program.
COUNTER RESET button– Press to reset counter to 0:00:00.

20 GAME button– Sets the game mode and external input mode at the same time.

21 TIME SEARCH button– Press to activate Time Search mode.

22 PAUSE/STILL button– Press to temporarily stop the tape during the recording or to view a still picture during playback.

23 MUTE button– Mutes the sound. Press it again to resume sound.

24 CHANNEL RETURN button– Press to go back to the previously viewed channel. For example, pressing this button once will change channel display from 3 (present channel) to 10 (previously viewed channel), and pressing it a second time will return from 10 to 3.

25 WAKE-UP/SLEEP button– Set the Wake up or Sleep Timer.

26 TV/FM button– Set the FM mode.

27 ANT. terminal– Connect to an antenna or cable system.

28 DC 13.2V jack– Connect to the Car Battery Cord.

29 AC 120V jack– Connect to the AC cord.

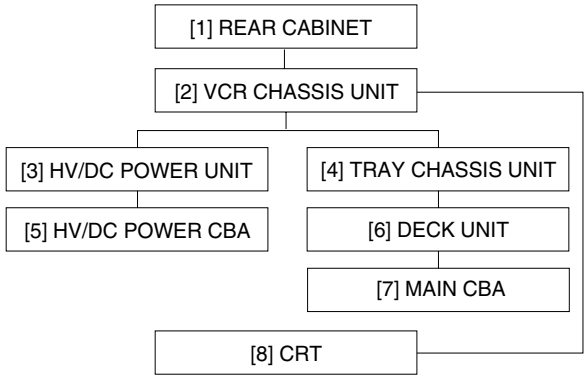
CABINET DISASSEMBLY INSTRUCTIONS

1. Disassembly Flowchart

This flowchart indicates the disassembly steps for the cabinet parts, and the CBA in order to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route and dress the cables as they were.

Caution !!

When removing the CRT, be sure to discharge the Anode Lead of the CRT with the CRT Ground Wire before removing the Anode Cap.



2. Disassembly Method

ID/ LOC. No.	PART	REMOVAL		
		Fig. No.	REMOVE/ *UNHOOK/ UNLOCK/RELEASE/ UNPLUG/ DESOLDER	Note
[1]	Rear Cabinet	1, 2	4(S-1), 3(S-2)	1
[2]	VCR Chassis Unit	3,4, 5	Anode Cap, CN501, CRT CBA, CN601, CN801, CN571	2
[3]	HV/DC Power Unit	3, 5	2(S-3)	3
[4]	Tray Chassis Unit	3	----------	-
[5]	HV/DC Power CBA	3, 5	3(S-4)	4
[6]	Deck Unit	3, 5	7(S-5), 2(S-6), Desolder (CL201, CL401, CL402, CL403)	5
[7]	Main CBA	3, 5	3(S-7)	6
[8]	CRT	4	4(S-8)	7
		↓ (3)	↓ (4)	↓ (5)

↓ (1) ↓ (2)

(1): Order of steps in Procedure. When reassembling, follow the steps in reverse order.These numbers are also used as the identification (location) No. of parts in Figures.

(2): Parts to be removed or installed.

(3): Fig. No. showing Procedure of Part Location.

(4): Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
S=Screw, P=Spring, L=Locking Tab, CN=Connector, *=Unhook, Unlock, Release, Unplug, or Desolder
2(S-2) = two Screw (S-2)

(5): Refer to the following"Reference Notes in the Table" following.

Reference Notes in the Table

1. Removal of the Rear Cabinet.
   Remove Screws 4(S-1) and Screws 3(S-2).

Caution !!

Discharge the Anode Lead of the CRT with the CRT Ground Wire before removing the Anode Cap.

2. Removal of the Tray Chassis.
   Discharge the Anode Lead of the CRT with the CRT Ground before removing the Anode Cap.
   Disconnect the following: Anode Cap, CN501, CRT CBA, CN601, CN571 and CN801. Then, pull the Tray Chassis backward.
3. Removal of the HV/DC Power Unit.
   Remove Screws 2(S-3).
4. Removal of the HV/DC Power CBA.
   Remove Screws 3(S-4).
5. Removal of the Deck Unit.
   Remove Screws 7(S-5) and 2(S-6). Then, desolder connectors (CL201, CL401, CL402, CL403) and lift up the Deck Unit.
6. Removal of the Main CBA.
   Remove Screws 3(S-7) and pull up the Main CBA.
7. Removal of the CRT.
   Remove Screws 4(S-8) and pull the CRT backward.

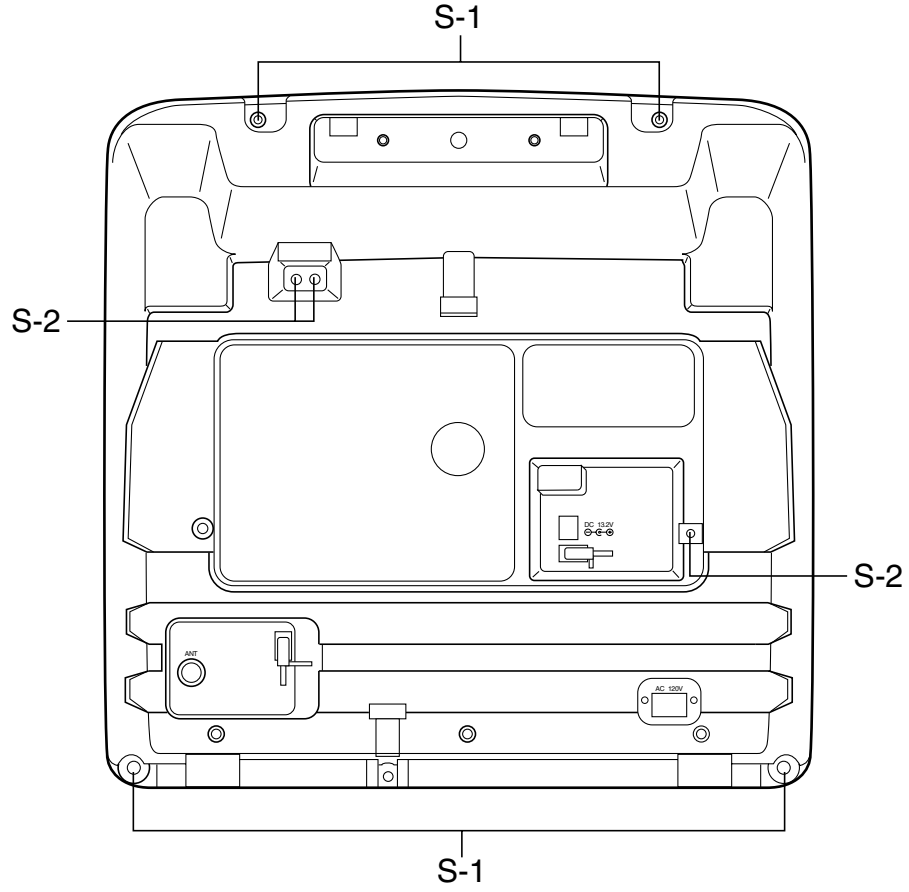
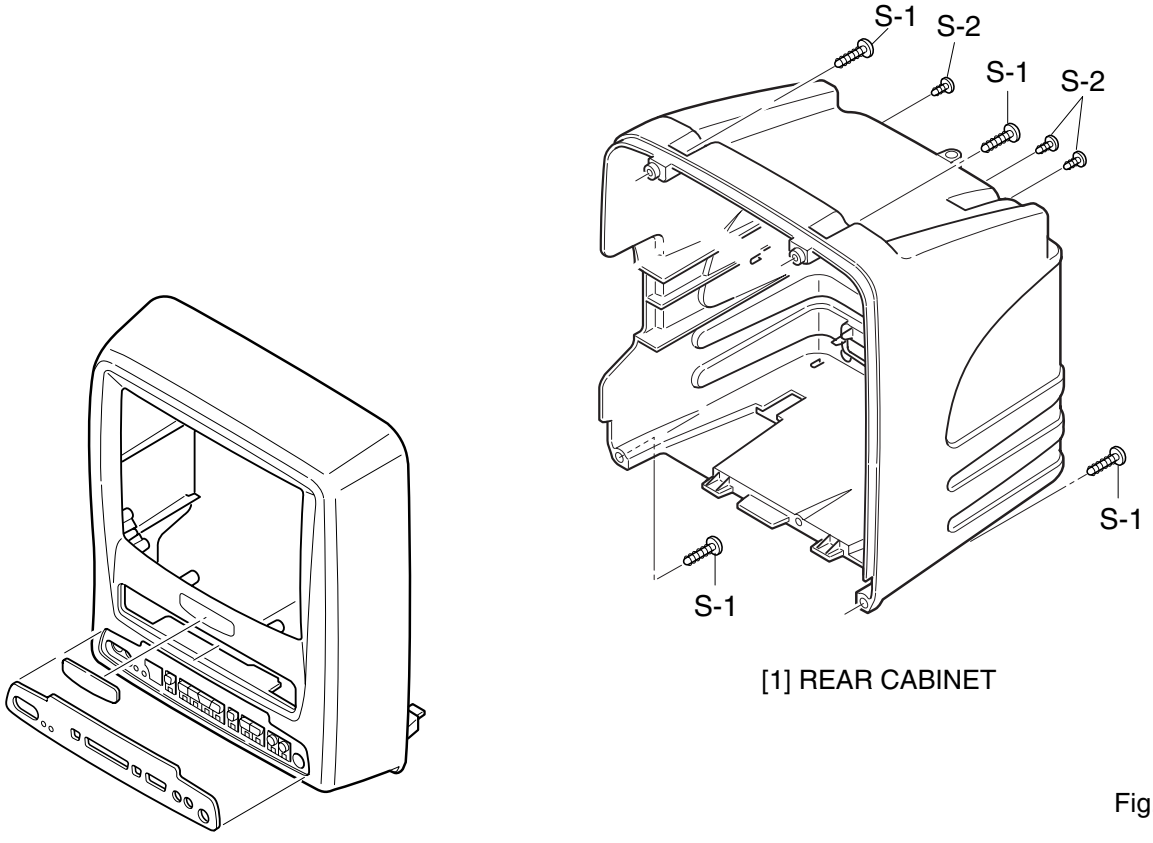


Fig. 1



[1] REAR CABINET

Fig. 2

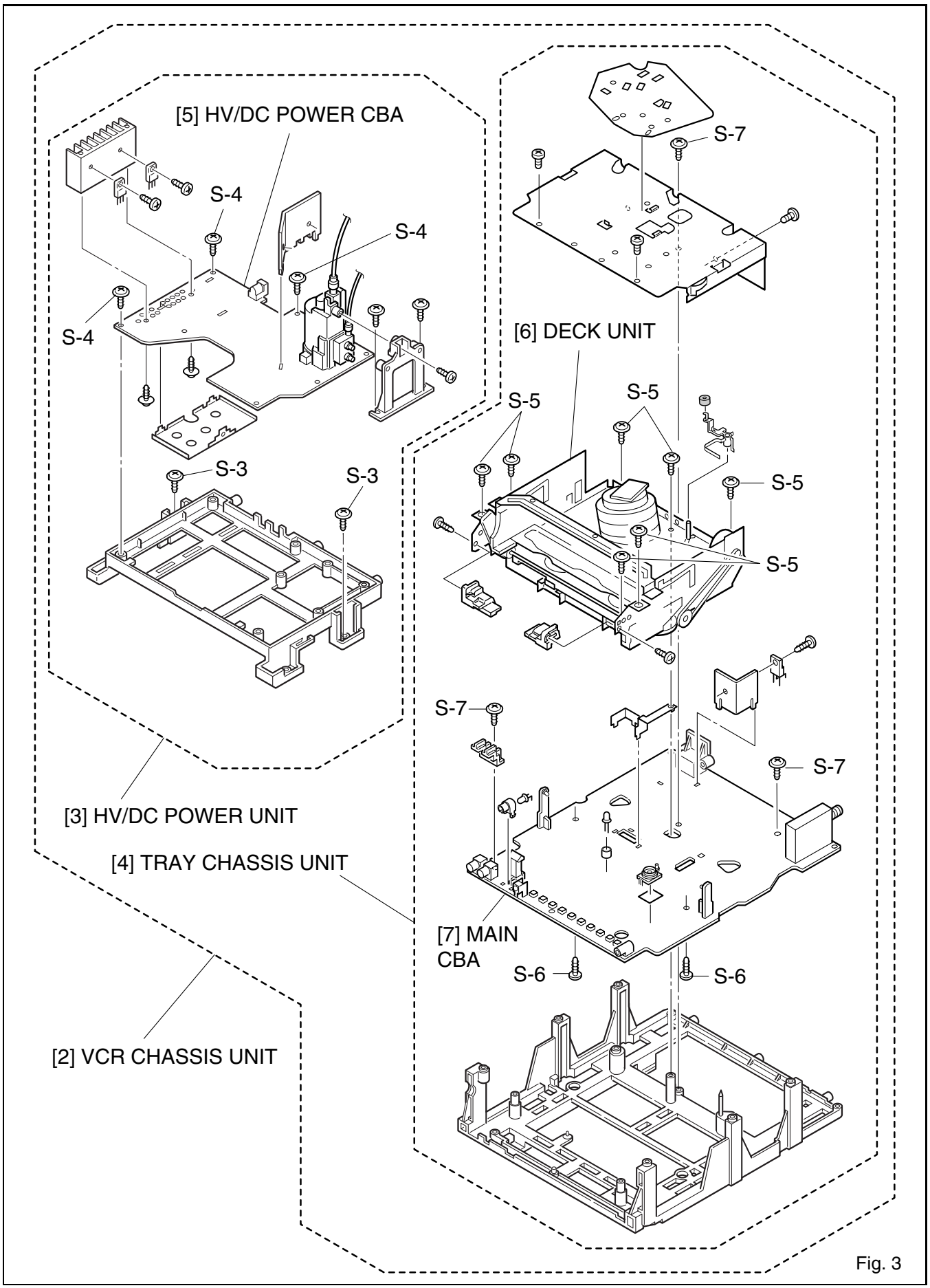

[5] HV/DC POWER CBA
S-4
S-4
S-4
S-3
S-3
[3] HV/DC POWER UNIT
S-7
[6] DECK UNIT
S-5
S-5
S-5
S-5
S-7
S-7
[4] TRAY CHASSIS UNIT
[7] MAIN CBA
S-6
S-6
[2] VCR CHASSIS UNIT

Fig. 3

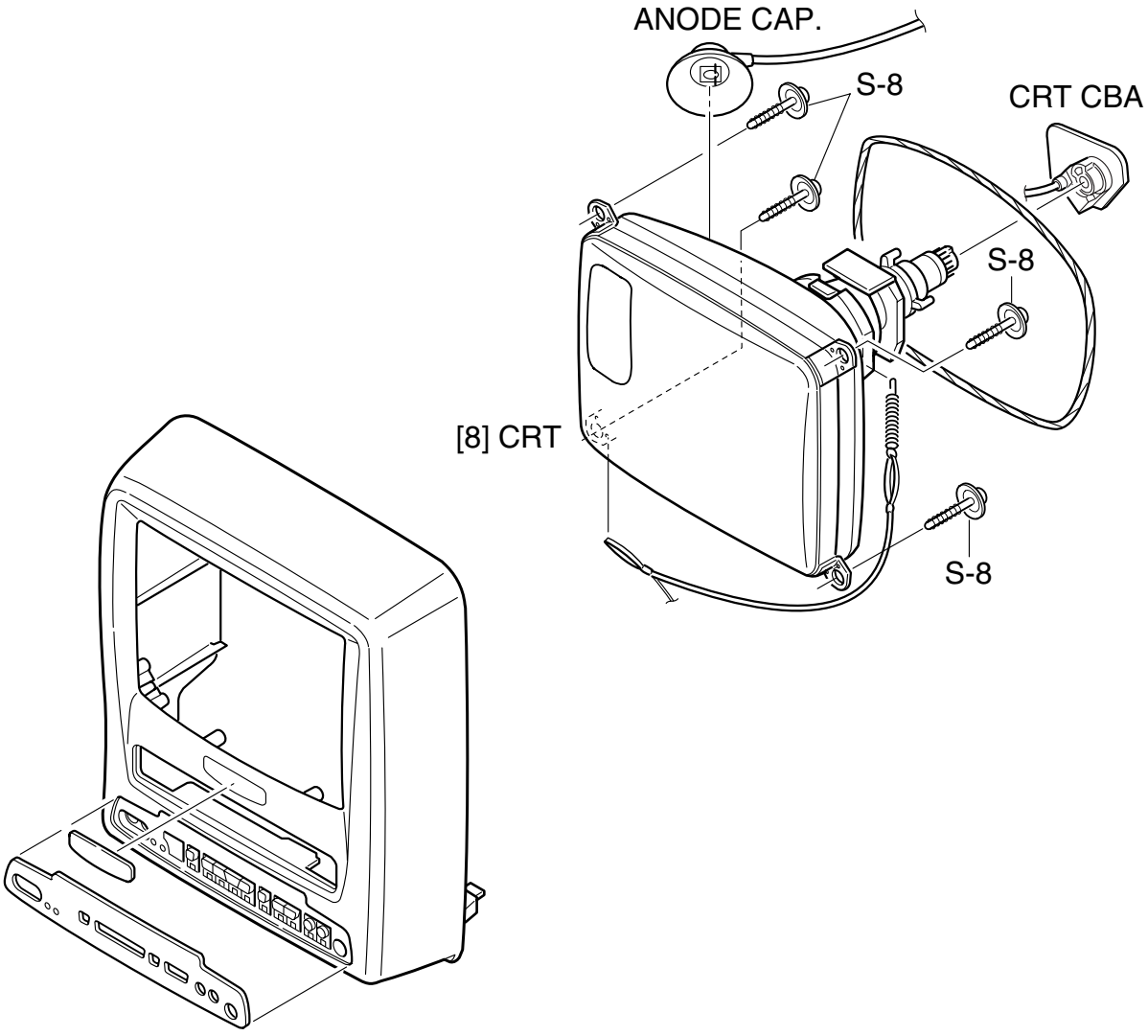


Fig. 4

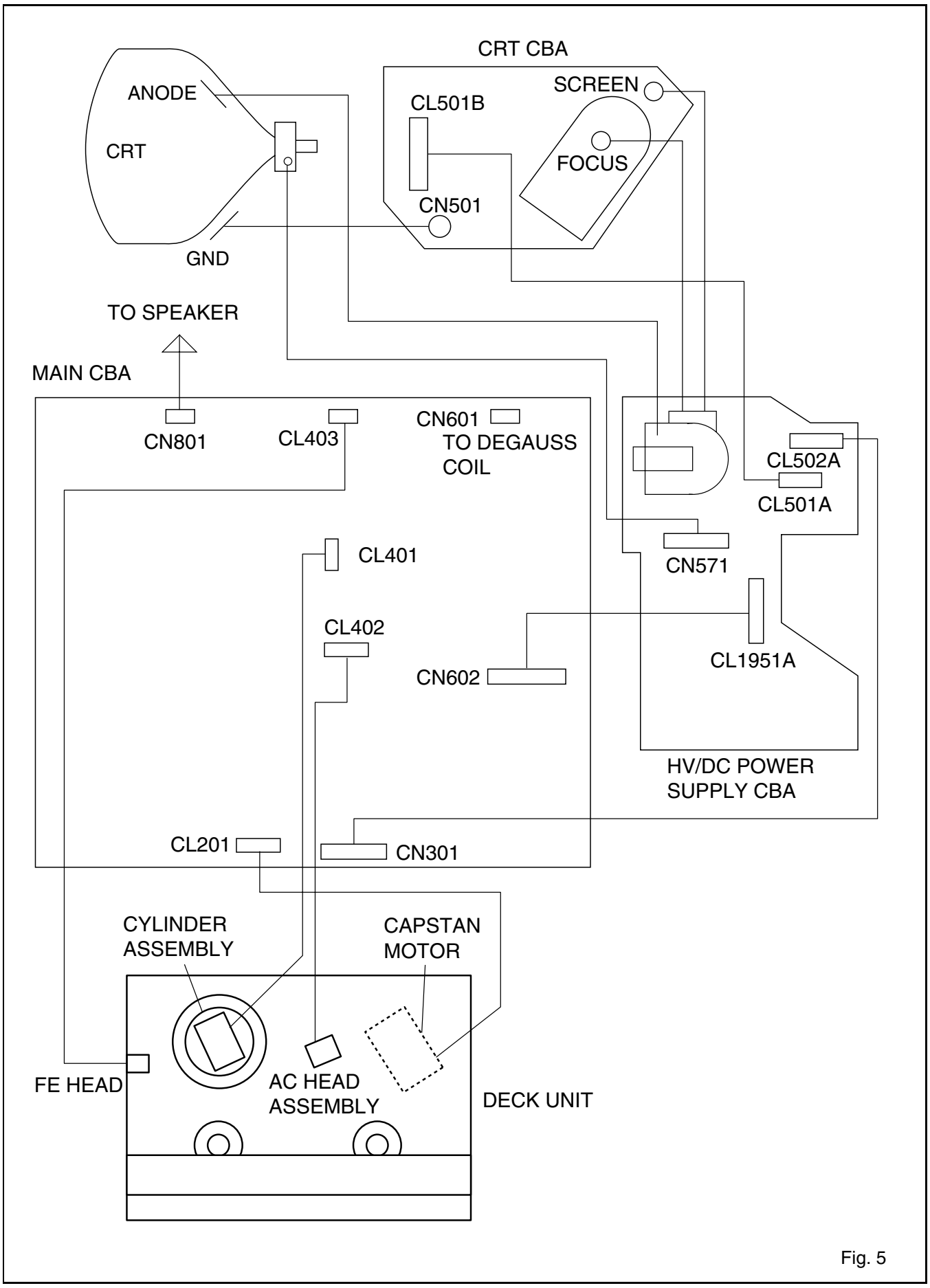

CRT CBA
ANODE
CRT
SCREEN
CL501B
FOCUS
CN501
GND
TO SPEAKER
MAIN CBA
CN801
CL403
CN601
TO DEGAUSS
COIL
CL502A
CL501A
CN571
CL401
CL402
CN602
CL1951A
HV/DC POWER
SUPPLY CBA
CL201
CN301
CYLINDER
ASSEMBLY
CAPSTAN
MOTOR
FE HEAD
AC HEAD
ASSEMBLY
DECK UNIT

Fig. 5

ELECTRICAL ADJUSTMENT INSTRUCTIONS

General Note:

"CBA" is abbreviation for "Circuit Board Assembly."

NOTE:

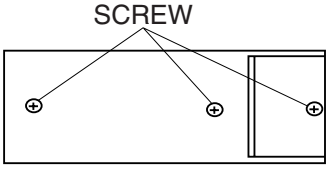
Electrical adjustments are required after replacing circuit components and certain mechanical parts.
It is important to perform these adjustments only after all repairs and replacements have been completed.
Also, do not attempt these adjustments unless the proper equipment is available.

Test Equipment Required

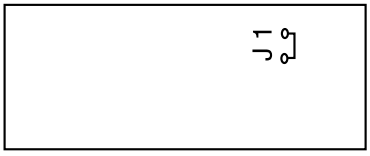
1. NTSC Pattern Generator (Color Bar W/White Window, Red Color, Dot Pattern, Gray Scale, Monoscope, Multi-Burst)
2. AC Milli Voltmeter (RMS)
3. Alignment Tape (FL8A, FL8N), Blank Tape
4. DC Voltmeter
5. Oscilloscope: Dual-trace with 10:1 probe,
   V-Range: 0.001~50V/Div,
   F-Range: DC~AC-60MHz
6. Frequency Counter
7. Plastic Tip Driver

How to make service remote control unit:

1. Prepare normal remote control unit. (Part No. N0107UD) Remove 3 screws from the back lid. (Fig. 1-1)
2. Added J1 (Jumper Wire) to the remote control CBA. (Fig. 1-2)



Remote control unit (Bottom) **Fig. 1-1**



Remote control CBA **Fig. 1-2**

How to Set up the Service mode:

Service Mode:

1. Use the service remote control unit.
2. Turn the power on.
3. Press " WAKE-UP/SLEEP " button on the service remote control unit.

1a. DC 117V (+B) Adjustment (AC Power)

Purpose: To obtain correct operation.

Symptom of Misadjustment: The picture is dark and unit does not operate correctly.

Test point	Adj. Point	Mode	Input
TP601 (+B) TP602 (GND)	VR601	---	-----
Tape	M. EQ.	Spec.	
---	DC Voltmeter Plastic Tip Driver	+117±0.5V DC	

Note: TP601(+B), TP602(GND), VR601 --- Main CBA

1. Connect the unit to AC Power Outlet.
2. Connect DC Volt Meter to TP601(+B) and TP602(GND).
3. Adjust VR601 so that the voltage of TP601(+B) becomes +117±0.5V DC.

1b. DC 117V (+B) Adjustment (DC Power)

Purpose: To obtain correct operation.

Symptom of Misadjustment: The picture is dark and unit does not operate correctly.

Test point	Adj. Point	Mode	Input
J1015 (+B) J1027 (GND)	VR1951	---	-----
Tape	M. EQ.	Spec.	
---	DC Voltmeter Plastic Tip Driver	+117±0.5V DC	

Note: J1015(+B), J1027(GND), VR1951 --- HV/DC Power Supply CBA

1. Input 13.2V DC to DC Jack.
2. Connect DC Volt Meter to J1015(+B) and J1027(GND).
3. Adjust VR1951 so that the voltage of J1015(+B) becomes +117±0.5V DC.

2. Auto AFT (VCO) Adjustment

Purpose: To operate AFT correctly.

Symptom of Misadjustment: AFT does not work correctly and/or synchronization is faulty.

Test point	Adj. Point	Mode	Input
---	---	Video	-----
Tape	M. EQ.	Spec.	
---	---	---	

1. Set the unit to the Video mode with no signal input.
2. Enter the Service mode. (See page 1-4-1.) Then press number "3" button on the remote control unit.
3. If the screen color changes to "Green" then this adjustment is finished.
4. If the screen color changes to "Red" then this adjustment is failed. Repeat steps 1 and 2 or check relative circuit or parts (IC).

3-1. TV AGC Adjustment

Purpose: Set AGC (Auto Gain Control) Level.

Symptom of Misadjustment: AGC does not synchronize correctly when RF input level is too weak and picture distortion may occur if it is too strong.

Test point	Adj. Point	Mode	Input
TP001 (AGC) TP602 (GND)	CH. ▲ / ▼ buttons	---	Color Bar 67.25MHz 60dBμV
Tape	M. EQ.	Spec.	
---	Pattern Generator DC Voltmeter	+2.8±0.3V DC	

Note: TP001 (AGC) --- Main CBA

1. Enter the Service mode. (See page 1-4-1.) Then press number "2" button on the remote control unit.
2. Receive the Color Bar signal for channel 4 (67.25MHz). (RF Input Level: 60dBμV)
3. Press CH. ▲ / ▼ buttons so that the voltage of TP001 (AGC) becomes +2.8V±0.3V DC.
4. Turn the power off and on again.

3-2. FM AGC Adjustment (SSC092 only)

1. Enter the Service mode. (See page 1-4-1.) Then press number "2" button twice on the remote control unit.
2. Press CH. ▲ / ▼ buttons so that the FM AGC level is 127.

4-1. H Adjustment

Purpose: To get correct horizontal position and size of screen image.

Symptom of Misadjustment: Horizontal position and size of screen image may not be properly displayed.

Test point	Adj. Point	Mode	Input
D302 CATHODE	CH ▲ / ▼ buttons	Video	---
Tape	M. EQ.	Spec.	
---	Frequency Counter	15.734kHz±300Hz	

Note: D302 CATHODE --- Main CBA

1. Connect Frequency Counter to D302 CATHODE.
2. Set the unit to the VIDEO mode and no input is necessary. Enter the Service mode. (See page 1-4-1.)
3. Operate the unit for at least 20 minutes.

4. Press "2" button on the remote control unit and select H-Adj Mode. (Press "2" button, then display will change H-Adj and AGC.)
5. Press CH ▲ / ▼ buttons on the remote control unit so that the display will change "0" to "7."
   At this moment, choose display "0" to "7" when the Frequency counter display is closest to 15.734kHz±300Hz.
6. Turn the power off and on again.

4-2. C-Trap Adjustment

Purpose: To get minimum leakage of the color signal carrier.

Symptom of Misadjustment: If C-Trap Adjustment is incorrect, stripes will appear on the screen.

Test point	Adj. Point	Mode	Input
D304 CATHODE (B-OUT)	CH ▲ / ▼ buttons	---	Color Bar
Tape	M. EQ.	Spec.	
---	Oscilloscope Pattern Generator	---	
Figure			

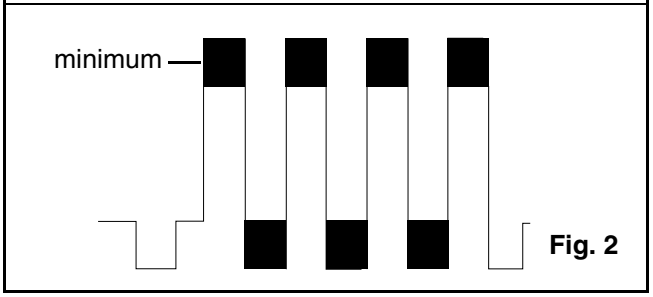


Fig. 2

Note: D304 CATHODE (B-Out)--- Main CBA

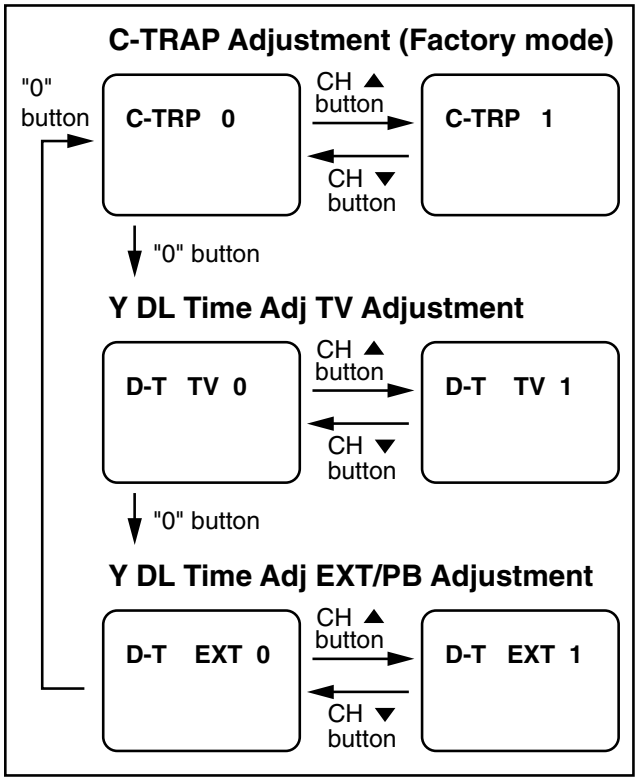
1. Connect Oscilloscope to D304 CATHODE.
2. Input a color bar signal from RF input.
   Enter the Service mode. (See page 1-4-1.)
3. Press "0" button on the remote control unit and select C-TRAP Mode.
4. Press CH ▲ / ▼ buttons on the remote control unit so that the carrier leakage B-Out (3.58MHz) value becomes minimum on the oscilloscope.
5. Turn the power off and on again.

4-3. Y DL Time Adjustment

Purpose: To get minimum leakage of the color signal carrier.

Symptom of Misadjustment: If Y DL Time Adjustment is incorrect, stripes will appear on the screen.

1. Enter the Service mode. (See page 1-4-1.)
2. Press "0" button on the remote control unit twice to show "D-T" on the display.
3. Select "2" by pressing CH ▲ / ▼ buttons on the remote control to enter Y DL Time Adjustment mode.
4. If needed, perform the following.



5. V. Size Adjustment

Purpose: To obtain correct vertical height of screen image.

Symptom of Misadjustment: If V. Size is incorrect, vertical height of image on the screen may not be properly displayed.

Test point	Adj. Point	Mode	Input
---	CH ▲ / ▼ buttons	---	Monoscope
Tape	M. EQ.	Spec.	
---	Pattern Generator	90±5%	

1. Enter the Service mode. (See page 1-4-1.)
   Press "9" button on the remote control unit and select V-S Mode. (Press "9" button then display will change to V-P and V-S).
2. Input monoscope pattern.
3. Press CH ▲ / ▼ buttons on the remote control unit so that the monoscope pattern is 90±5% of display size and the circle is round.

6. V. Shift Adjustment

Purpose: To obtain correct vertical position of screen image.

Symptom of Misadjustment: If V. position is incorrect, vertical position of image on the screen may not be properly displayed.

Test point	Adj. Point	Mode	Input
---	CH ▲ / ▼ buttons	---	Monoscope
Tape	M. EQ.	Spec.	
---	Pattern Generator	90±5%	

1. Enter the Service mode. (See page 1-4-1.)
   Press "9" button on the remote control unit and select V-P Mode. (Press "9" button then display will change to V-P and V-S).
2. Input monoscope pattern.
3. Press CH ▲ / ▼ buttons on the remote control unit so that the top and bottom of the monoscope pattern are equal to each other.

7. H. Shift Adjustment

Purpose: To obtain correct horizontal position and size of screen image.

Symptom of Misadjustment: Horizontal position and size of screen image may not be properly displayed.

Test point	Adj. Point	Mode	Input
---	CH ▲ / ▼ buttons	---	Monoscope
Tape	M. EQ.	Spec.	
---	Pattern Generator	90±5%	

1. Enter the Service mode. (See page 1-4-1.)
   Press "8" button on the remote control unit and select H-P Mode.
2. Input monoscope pattern.
3. Press CH ▲ / ▼ buttons on the remote control unit so that the left and right side of the monoscope pattern are equal to each other.
4. Turn the power off and on again.

8. Cut-off Adjustment

Purpose: To adjust the beam current of R, G, B, and screen voltage.

Symptom of Misadjustment: White color may be reddish, greenish or bluish.

Test point	Adj. Point	Mode	Input
---	Screen-Control	Ext.	Black Raster / White Raster
Tape	M. EQ.	Spec.	
---	Pattern Generator	See Reference Notes below	

Figure

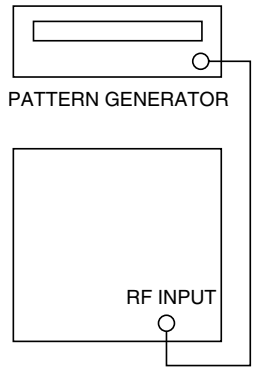


Fig. 3

Notes: Screen Control FBT --- HV/DC Power Supply CBA

F.B.T= Fly Back Transformer
Use the Remote Control Unit

1. Degauss the CRT and allow CRT to operate for 20 minutes before starting the alignment.
2. Set the screen control to minimum position. Input the Black raster signal from RF input.
3. Enter the Service Mode. (See page 1-4-1.)
   Dimmed horizontal line appears on the CRT.
4. Press the "VOL ▼" button.
   (Press "VOL ▼" then display will change CUT OFF/ DRIVE, VCO adjustment, Analog OSD adjustment).
5. Choose CUT OFF/DRIVE Mode then press "1" button. This adjustment mode is CUT OFF (R).
6. Press the "CH ▲ / ▼" button until the horizontal line becomes white.
7. Choose CUT OFF/DRIVE mode then press "2" button. This adjustment mode is CUT OFF (G). Press "CH ▲ / ▼" until the horizontal line becomes white.
8. Choose CUT OFF/DRIVE Mode then press "3" button. This adjustment mode is CUT OFF (B). Press "CH ▲ / ▼" until the horizontal line becomes white.
9. Input the White Raster Signal from Video In.
10. Choose CUT OFF/DRIVE mode then press "4." Adjust the RED DRIVE as needed with the CH ▲ / ▼ buttons to get the following value, X= 286, Y= 294.
11. Choose CUT OFF/DRIVE mode then press "5." Adjust the BLUE DRIVE as needed with the CH ▲ / ▼ buttons to get the following value, X= 286.
12. Turn the power off and on again.

9. Sub-Brightness Adjustment

Purpose: To get proper brightness.

Symptom of Misadjustment: If Sub-Brightness is incorrect, proper brightness cannot be obtained by adjusting the Brightness Control.

Test point	Adj. Point	Mode	Input
---	CH ▲ / ▼ buttons	---	SYMPTE 7.5 IRE
Tape	M. EQ.	Spec.	
---	Pattern Generator	See below	
Figure			

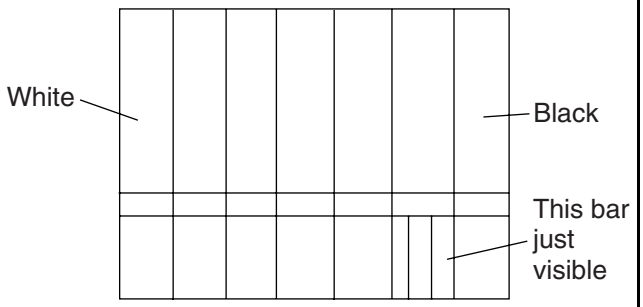


Fig. 4

Note: SYMPTE Setup level --- 7 IRE

1. Enter the Service Mode. (See page 1-4-1.)
   Then input SYMPTE signal from RF input.
2. Press MENU button. (Press MENU button then display will change B R T, C N T, COL, T N T, V-T and SHP). Select BRT and press CH ▲ / ▼ buttons so that the bar is just visible (See above figure).
3. Turn the power off and on again.

10. Focus Adjustment

Purpose: Set the optimum Focus.

Symptom of Misadjustment: If Focus Adjustment is incorrect, blurred images are shown on the display.

Test point	Adj. Point	Mode	Input
---	Focus Control	---	Monoscope
Tape	M. EQ.	Spec.	
---	Pattern Generator	See below.	

Note: Focus VR (FBT) --- MAIN CBA

FBT= Fly Back Transformer

1. Operate the unit more than 30 minutes.
2. Face the unit to the East and degauss the CRT using a Degaussing Coil.
3. Input the monoscope pattern.
4. Adjust the Focus Control on the FBT to obtain clear picture.

11. Head Switching Position Adjustment

Purpose: Determine the Head Switching Point during Play back.

Symptom of Misadjustment: May cause Head Switching Noise or Vertical Jitter in the picture.

Note: Unit reads Head Switching Position automatically and displays it on the screen (Upper Left Corner).

1. Playback test tape (FL8A, FL8N).
2. Enter the Service Mode. (See page 1-4-1.)
   Then press the number 5 button on the remote control unit.
3. The Head Switching position will display on the screen; if adjustment is necessary follow step 4. 6.5H(412.7µs) is preferable.
4. Press "CH ▲" or "CH ▼" button on the remote control unit if necessary. The value will be changed in 0.5H steps up or down. Adjustable range is up to 9.5H. If the value is beyond adjustable range, the display will change as:
   Lower out of range: 0.0H
   Upper out of range: -.-H
5. Turn the power off and on again.

12. CCS Text Box Location

When replacing the CRT, the CCS Box might not stay in appropriate position. Then, replace micro computer.

Note: This adjustment automatically done by the microcomputer.

The following 2 adjustments normally are not attempted in the field. They should be done only when replacing the CRT then adjust as a preparation.

13. Purity Adjustment

Purpose: To obtain pure color.

Symptom of Misadjustment: If Color Purity Adjustment is incorrect, large areas of color may not be properly displayed.

Test point	Adj. Point	Mode	Input
---	Deflection Yoke Purity Magnet	---	*Red Color
Tape	M. EQ.	Spec.	
---	Pattern Generator	See below.	

Figure

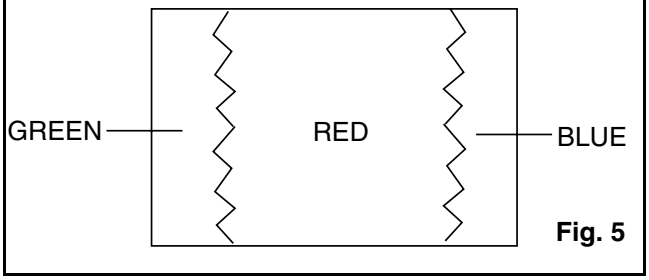


Fig. 5

* This becomes RED COLOR if push 7KEY with a service mode.

1. Set the unit facing east.
2. Operate the unit for over 30 minutes before adjusting.
3. Fully degauss the unit using an external degaussing coil.
4. Set the unit to the AUX Mode which is located before CH2 then input a red raster from video in.
5. Loosen the screw on the Deflection Yoke Clamper and pull the Deflection Yoke back away from the screen. (See Fig. 6.)
6. Loosen the Ring Lock and adjust the Purity Magnets so that a red field is obtained at the center of the screen. Tighten Ring Lock. (See Fig. 5,6.)
7. Slowly push the Deflection Yoke toward the bell of the CRT and set it where a uniform red field is obtained.
8. Tighten the clamp screw on the Deflection Yoke.

14. Convergence Adjustment

Purpose: To obtain proper convergence of red, green and blue beams.

Symptom of Misadjustment: If Convergence Adjustment is incorrect, the edge of white letters may have color edges.

Test point	Adj. Point	Mode	Input
---	C.P. Magnet (RB), C.P. Magnet (RB-G), Deflection Yoke	---	Dot Pattern or Crosshatch
Tape	M. EQ.	Spec.	
---	Pattern Generator	See below.	

Figure

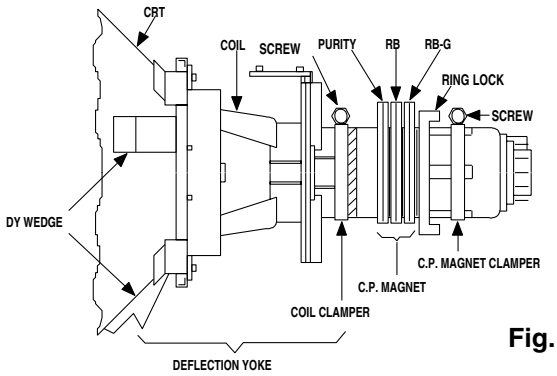


Fig. 6

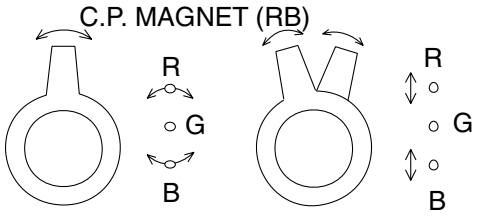


Fig. 7

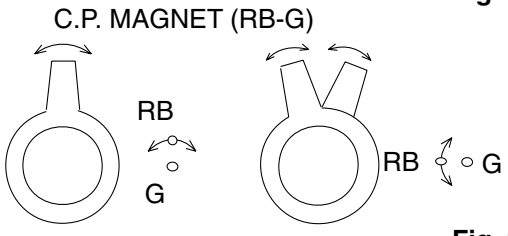
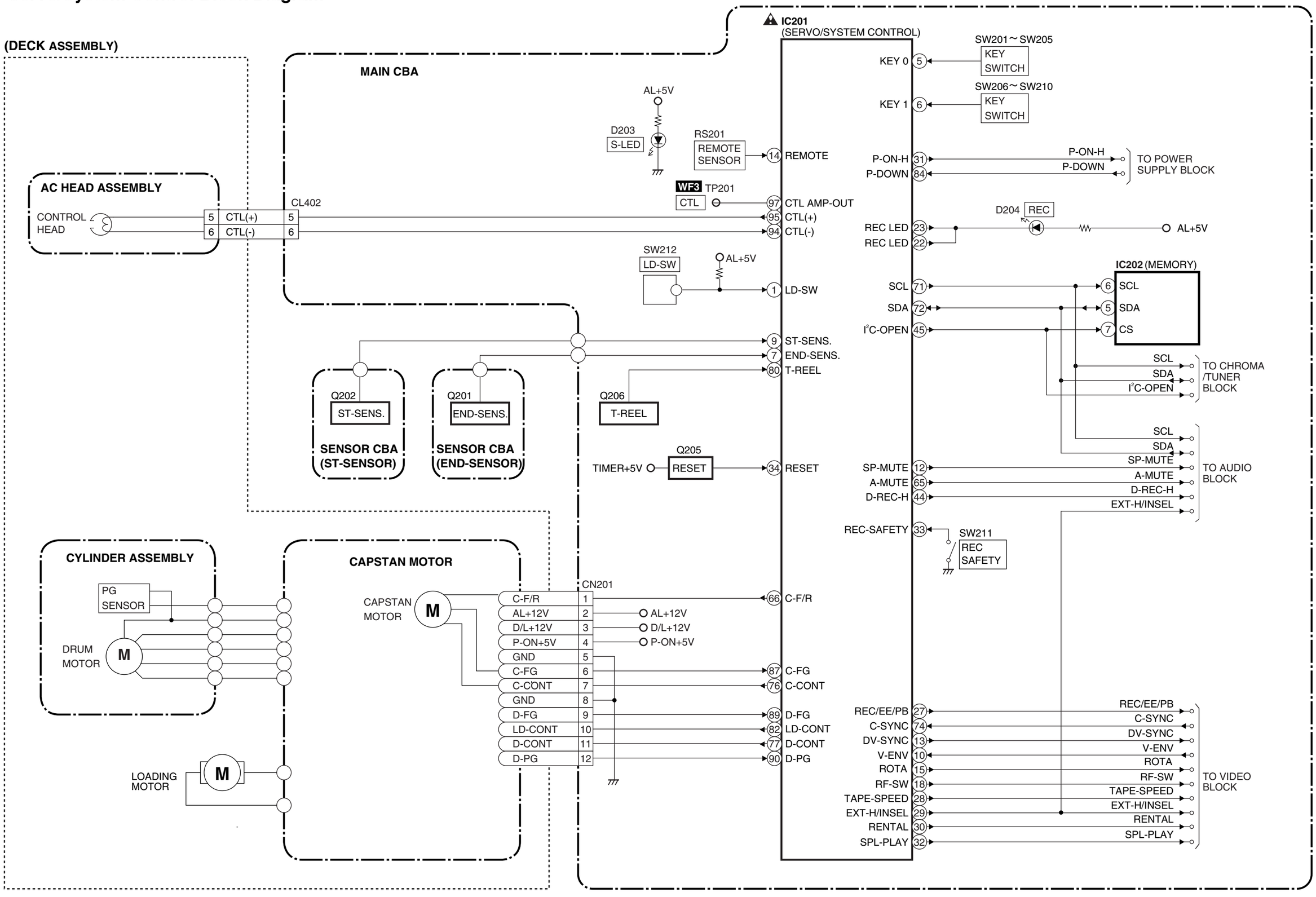


Fig. 8

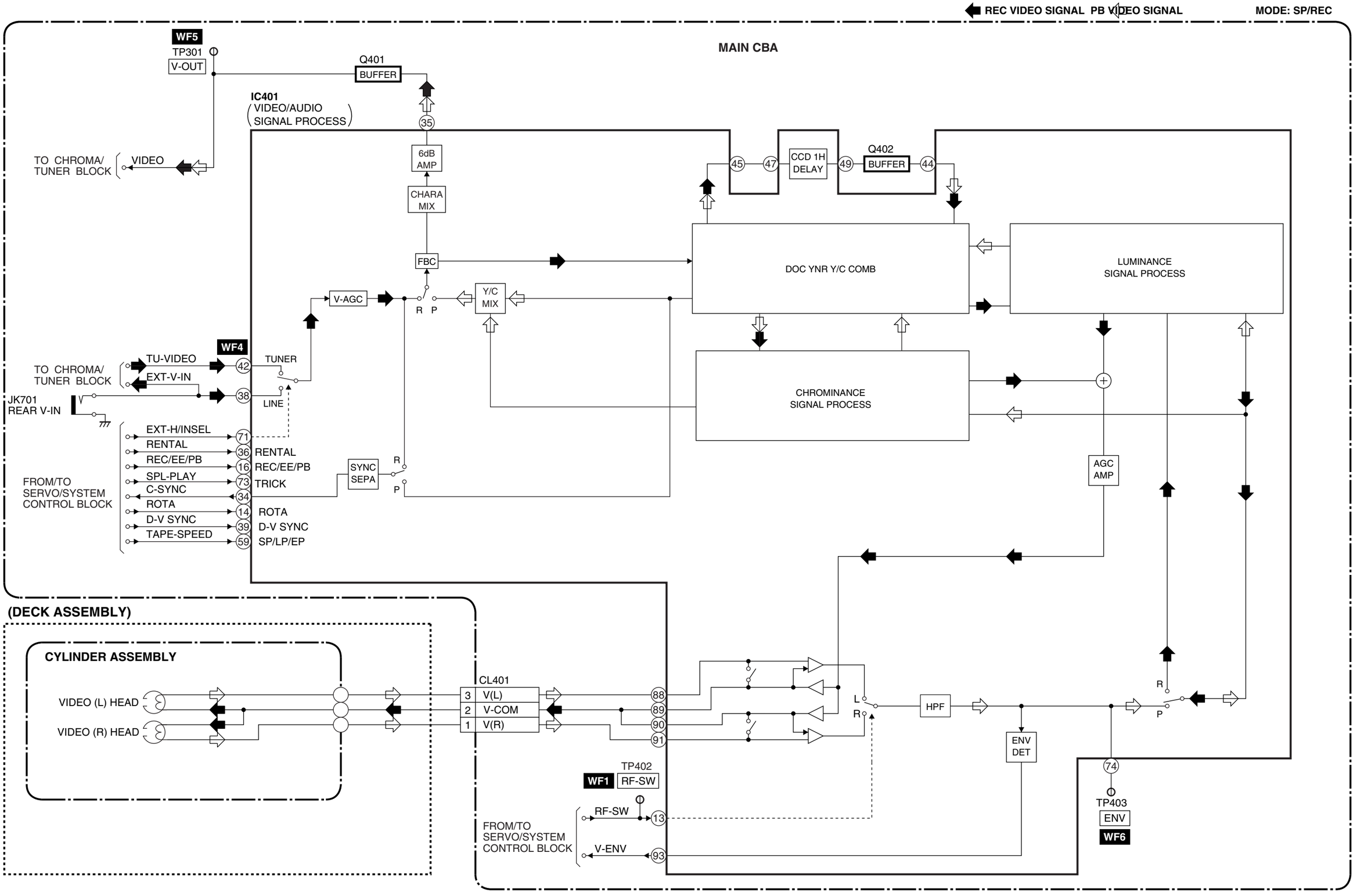
1. Set the unit to the AUX Mode which is located before CH2 then input a Dot or crosshatch pattern.
2. Loosen the Ring Lock and align red with blue dots or Crosshatch at the center of the screen by rotating (RB) C.P. Magnets. (See Fig. 7.)
3. Align red / blue with green dots at the center of the screen by rotating (RB-G) C.P. Magnet. (See Fig. 8.)
4. Fix the C.P. Magnets by tightening the Ring Lock.
5. Remove the DY Wedges and slightly tilt the Deflection Yoke horizontally and vertically to obtain the best overall convergence.
6. Fix the Deflection Yoke by carefully inserting the DY Wedges between CRT and Deflection Yoke.

BLOCK DIAGRAMS

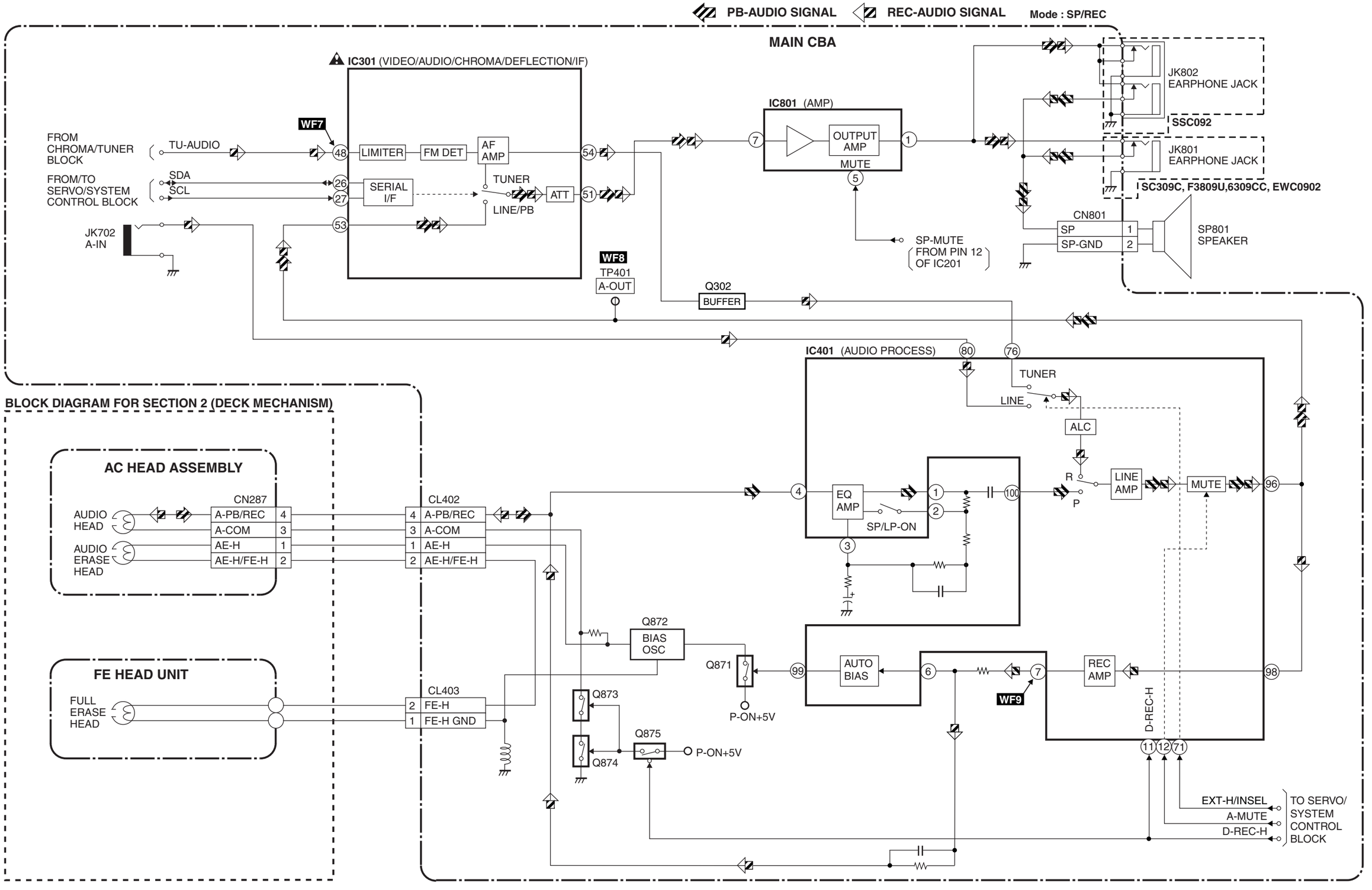
Servo/System Control Block Diagram



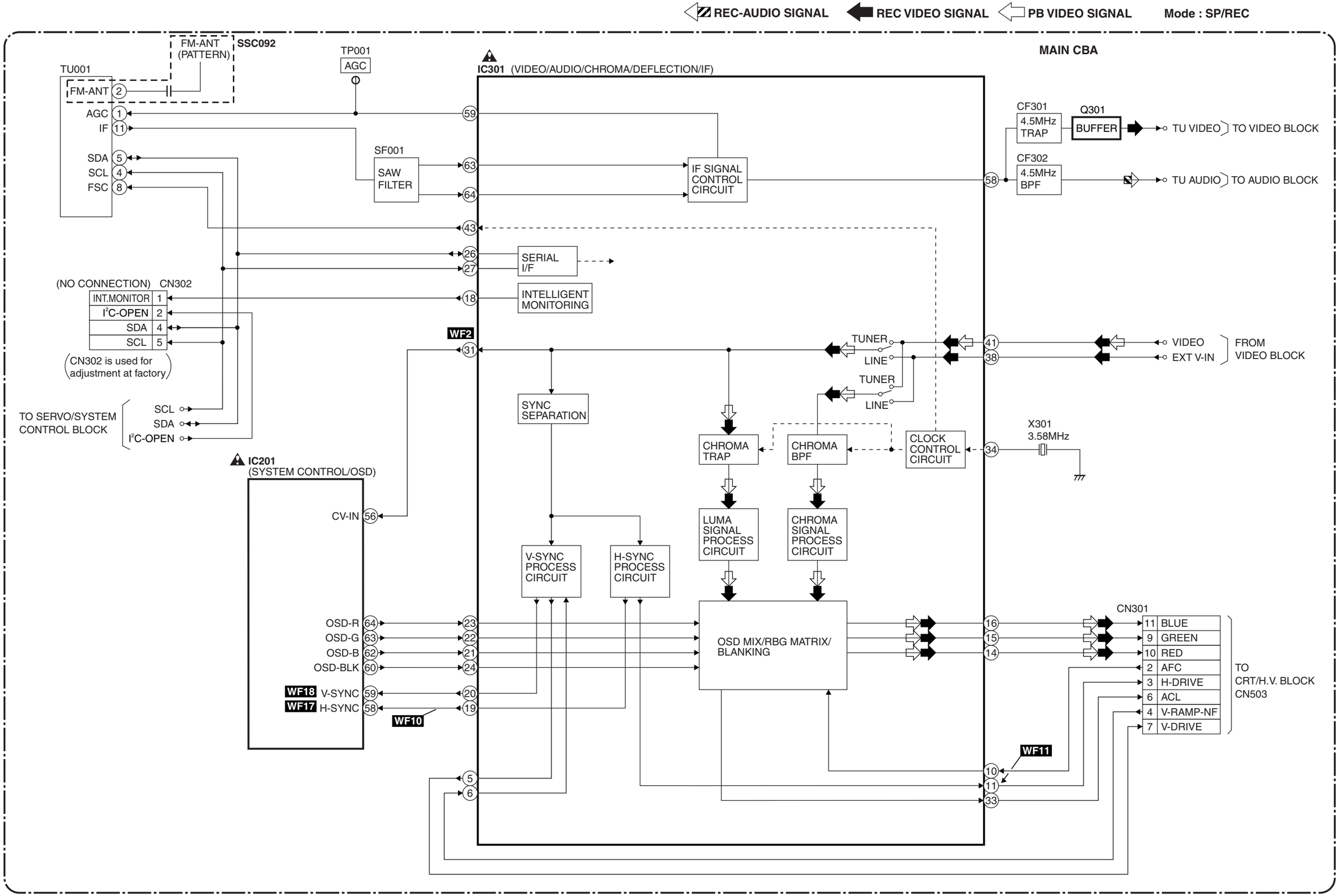
Video Block Diagram



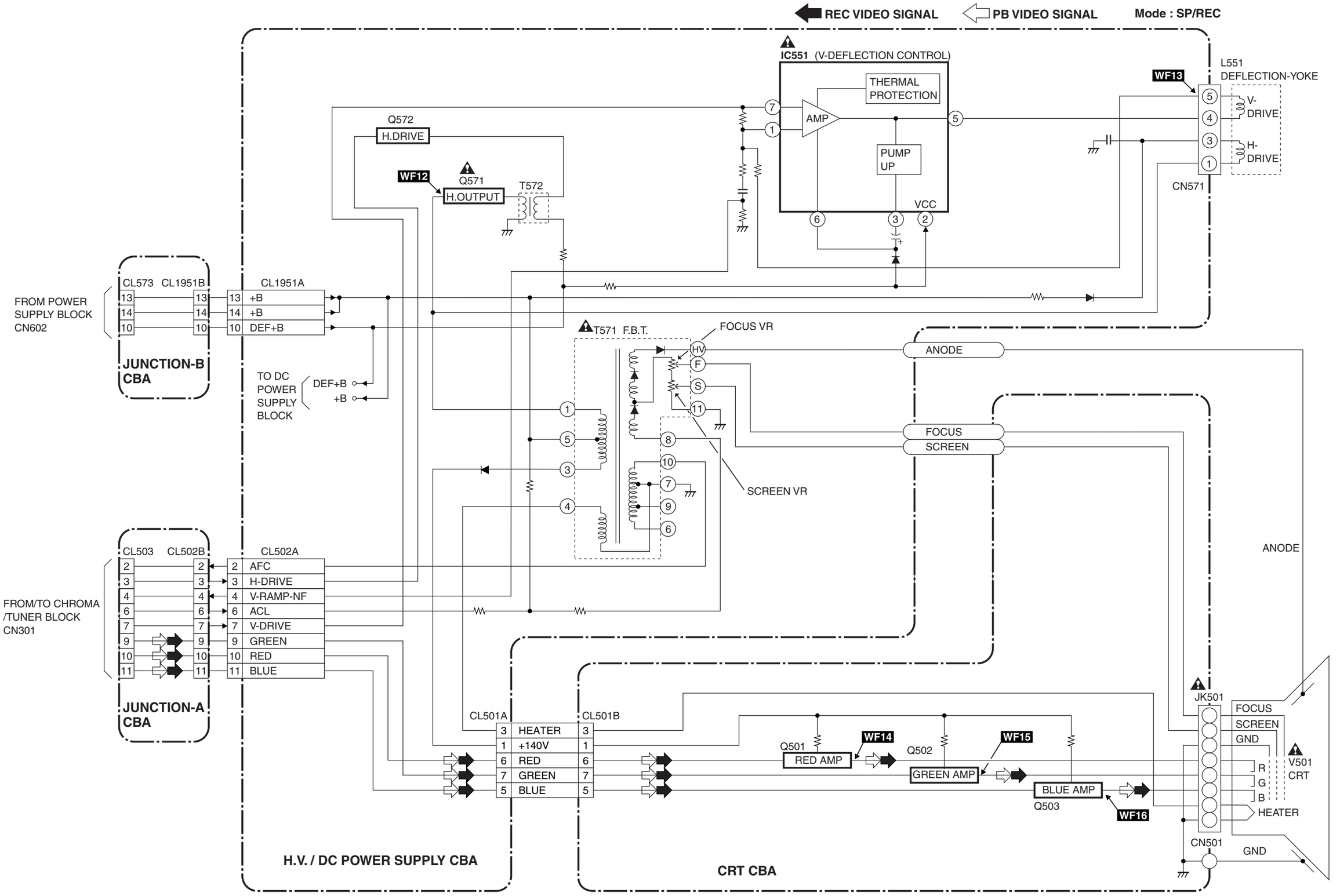
Audio Block Diagram



Chroma/Tuner Block Diagram

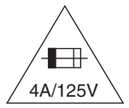


CRT/H.V. Block Diagram



Power Supply Block Diagram

CAUTION !
Fixed voltage power supply circuit is used in this unit.
If Main Fuse (F601) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.



CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES
D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

HOT CIRCUIT. BE CAREFUL.

HOT

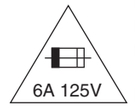
COLD

JK601 AC INLET
AC IN
F601 4A/125V
L601 LINE FILTER
D603 - D606 BRIDGE RECTIFIER
T601
TP601 +B
CN602
13 +B
14 +B
10 DEF+B
TO H.V./CRT BLOCK DIAGRAM CN573
CN601
PS601
DG1601 DEGAUSSING COIL
AL+33V
IC602 +5V REG.
Q608 +5V REG.
Q611 +5V REG.
P-ON+5V
P-ON+5V
P-ON+5V
Q610 +8V REG.
Q609 +5V REG.
AL+12V
P-ON+8V
AL+5V
Q601 SWITCHING
AL+5V
AL+12V
TIMER+5V
Q602 LIMITER
P-SAFETY2 (TO PIN3 OF IC201)
Q612
P-DOWN (TO PIN84 OF IC201)
Q958
Q606
IC601 (ERROR VOLTAGE DET)
VR601 +B ADJ.
Q607
Q604 FEED BACK
Q605
P-ON-H (FROM PIN31 OF IC201)
IC301
P-ON-ON
+5.7V REGULATOR
49
44
CN602
8 DC+13V
1 P-ON-H
7 AL+9V
5 AL+12V
3 AL+12V
TO DC POWER SUPPLY BLOCK DIAGRAM CN573
MAIN CBA

DC Power Supply Block Diagram

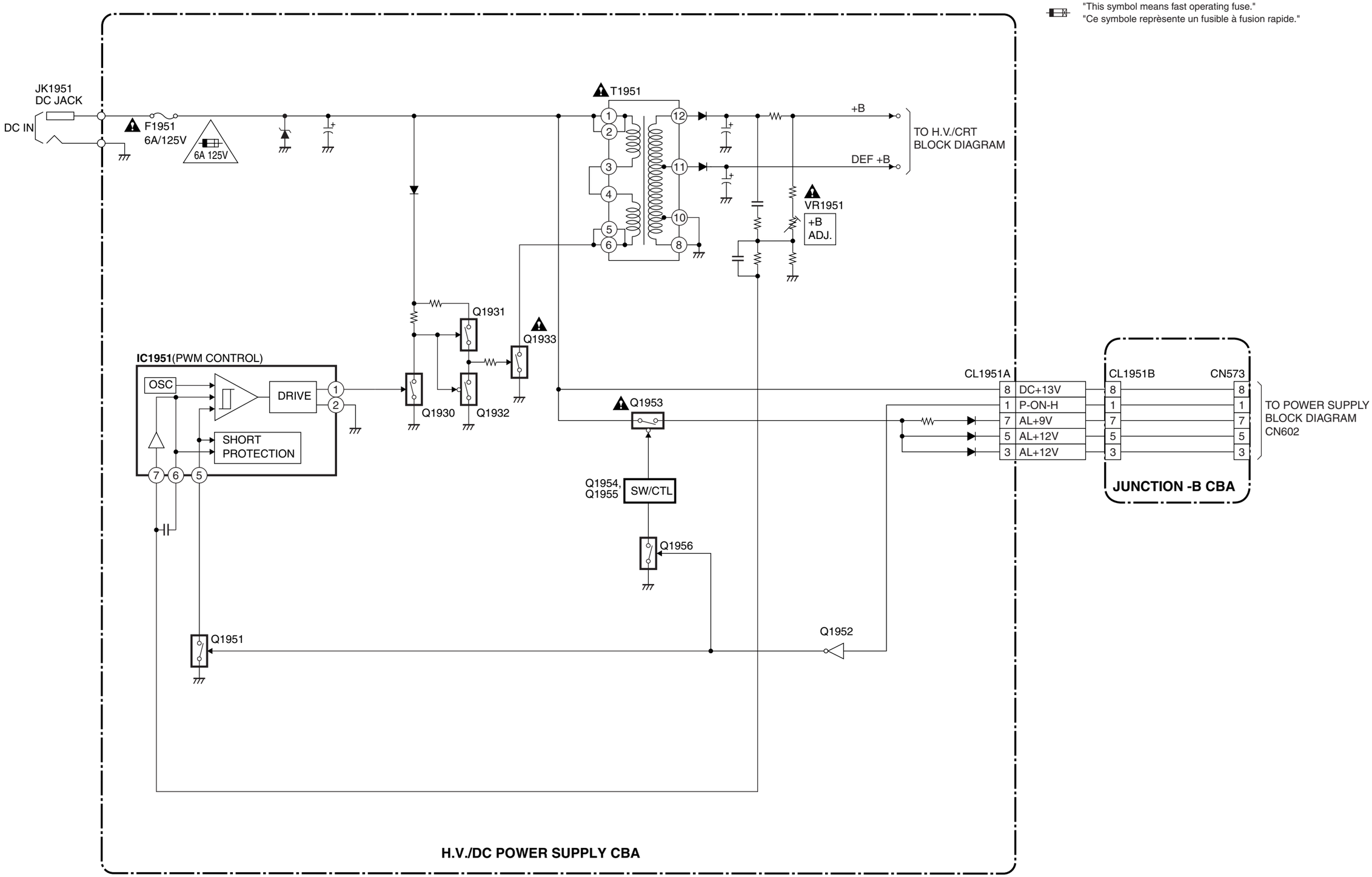
Fixed voltage power supply circuit is used in this unit.
If Main Fuse (F1601, F1951) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC(DC) plug to the AC(DC) power supply. Otherwise it may cause some components in the power supply circuit to fail.

NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.

"This symbol means fast operating fuse."
"Ce symbole reprèsente un fusible à fusion rapide."



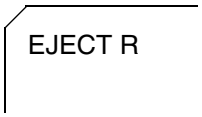
MECHANICAL TROUBLE INDICATOR

1, Each Malfunction Indication

If the MONITOR is turned ON right after the Mechanical Malfunction occurs or POWER SAFETY/X-RAY is turned ON, display the following character to show Malfunction after the EJECT display.

Immediately preceding Malfunction	Display character
REEL Malfunction	R
DRUM Malfunction	D
CASSETTE LOADING Malfunction	C
TAPE LOADING Malfunction	T
P-SAFETY 1	1
P-SAFETY 2	2
P-SAFETY 3	3
X-RAY	X

Example: If REEL Malfunction



2, Each Malfunction evaluation method

X-RAY protect

If X-RAY port becomes continuously 2.5V or more for 120 msec. (4 times 40 msec. interval), the unit shall immediately turn OFF the POWER/MONITOR and switch over to the Mechanical Malfunction mode with POWER OFF.

(To return from this mode shall become possible only by POWER Key as in the case of the Mechanical Malfunction).

POWER SAFETY

1) POWER SAFETY 1

   If P-SAFETY 1 port becomes continuously 2.5V or less for 120 msec. (4 times 40 msec. interval) when MONITOR is ON, the unit shall be assumed to be the Power Malfunction 1 and immediately turn OFF the POWER/MONITOR and switch over the Mechanical Malfunction mode with POWER OFF.

   (Shall not unload)

   (To return from this mode shall become possible only by POWER Key as in the case of the Mechanical Malfunction).

   * However the POWER SAFETY 1 function shall be disabled during 500 msec. right after the MONITOR turns ON.

2) POWER SAFETY 2

   If P-SAFETY 2 port becomes continuously 2.5V or less for 120 msec. (4 times 40 msec. interval) when P-ON-H port is ON, the unit shall be assumed to be the Power Malfunction 2 and immediately turn OFF the POWER/MONITOR and switch over the Mechanical Malfunction mode with POWER OFF.

   (Shall not unload)

   (To return from this mode shall become possible only by POWER Key as in the case of the Mechanical Malfunction).

   * However the POWER SAFETY 2 function shall be disabled during 500 msec. right after the P-ON-H turns ON.

3) POWER SAFETY 3

   If P-SAFETY 3 port becomes continuously 2.5V or over for 120 msec. (4 times 40 msec. interval) when MONITOR is ON, P-SAFETY 3 function is available. After that, if P-SAFETY 3 port becomes continuously 2.5V or less for 120 msec. (4 times 40 msec. interval), the unit shall be assumed to be the Power Malfunction 3 and immediately turn OFF the POWER/MONITOR and switch over the Mechanical Malfunction mode with POWER OFF.

   (Shall not unload)

   (To return from this mode shall become possible only by POWER Key as in the case of the Mechanical Malfunction).

   * However the POWER SAFETY 3 function shall be disabled during 500 msec. right after the MONITOR turns ON.

Mechanical Malfunction determination

1) REEL Malfunction detection

Countermeasure for REEL and CAPSTAN motor rotation malfunction (Except CASSETTE LOADING function)

After the Malfunction detection with REEL/CAPSTAN sensor, the unit shall switch over to STOP (B) and be REEL Mechanical Malfunction.

a) If the T-REEL pulse is not impressed after a lapse of 5 sec. at SP, 10 sec. at LP, 14 sec. at SLP, or more in the REEL Rotation Mode like PLAY/REC, FS/RS Mode, and the T-REEL or S-REEL pulse is not impress after a lapse of 4 sec. or more in REEL Rotation Mode of FF/REW, it shall be assumed to stop the rotation and switch over to STOP (B) position, then POWER be turned OFF and the unit be REEL Mechanical Malfunction. (T-REEL and S-REEL for the models on S-REEL and only T-REEL for other models)

b) If the C-FG pulse is not impressed for a lapse of 1 sec. or more during the CAPSTAN MOTOR rotation, it shall be MOTOR Rotation Malfunction (REEL Malfunction).

2) DRUM Malfunction detection

Detect the DRUM rotation at the D-FG input terminal.

If the variation of D-FG input level is not detected for a lapse of 1 sec. or more when D-CONT is "H", it shall be assumed to be Rotation Malfunction and be DRUM Malfunction.

When detect Drum Malfunction, POWER shall be turned OFF after the unit switches over to STOP (B) Mode.

3) Countermeasure for TAPE LOADING Malfunction

Detect the Malfunction with the LOADING Switch.

a) TAPE LOADING Malfunction

If LD-SW does not go to the established position after a lapse of 7 sec. or more from TAPE LOADING or TAPE UNLOADING start, the LOADING function shall immediately be stopped and POWER be turned OFF, and inform the Timer about the LOADING Mechanical Malfunction.

b) LD-SW Position Malfunction at each mode

When the unit operates at each mode, even if the LD-SW position changes from the established one in its mode, it keeps the function according to its mode.

4) Countermeasure for CASSETTE LOADING Malfunction

a) CASSETTE IN operating Malfunction

If LD-SW does not go to SB position after a lapse of 5 sec. or more from the CASSETTE insertion start, the unit starts the CASSETTE OUT operation.

After switch over to CASSETTE OUT operation and then a laps of 5 sec. or more from the CASSETTE OUT operation start, if LD-SW does not go to the EJ position or if START Sensor and END Sensor does not turn "ON" at the EJ position, the unit starts again to insert CASSETTE.

(However in S-INH state, the START/END Sensor shall be disabled).

b) CASSETTE OUT operating Malfunction

After a lapse of 5 sec. or more from CASSETTE OUT operation start, if LD-SW does not go to the EJ position or if START Sensor and END Sensor does not turn "ON" at the EJ position, the unit starts to insert CASSETTE.

(However in S-INH state, the START/END Sensor shall be disabled).

When the unit switches over to CASSETTE insertion at CASSETTE IN or CASSETTE OUT Malfunction, if LD-SW does not go to the SB position after a lapse of 5 sec. or more from CASSETTE insertion start, the function shall immediately be stopped and POWER be turned OFF, and the unit be CASSETTE LOADING Malfunction.

c) When POWER is turned ON, if the CL position or GC position cannot be detected after 5 sec. LD-REV operation and 5 sec. LD-FWD operation, the function shall immediately be stopped and POWER be turned OFF, and the unit be CASSETTE LOADING Malfunction.

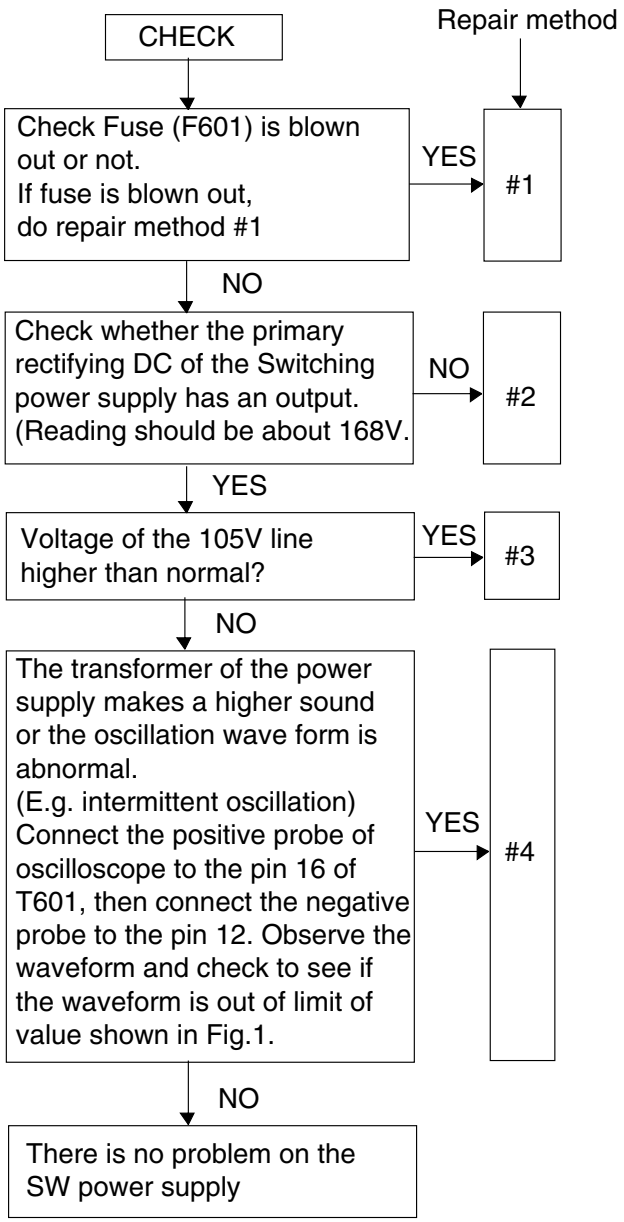
d) When POWER is turned ON without CASSETTE (EJ position) and LD-SW is monitored all the time, if the CL or GC position is detected continuously for 1 sec. or more, the POWER shall be turned OFF and the unit be CASSETTE LOADING Malfunction.

Countermeasure for Mechanical Malfunction

If the unit detects Mechanical Malfunction, turn the POWER OFF. If the unit is Mechanical Malfunction, Key input except POWER key shall be disabled and CASSETTE insertion disabled. When POWER Key is entered, the POWER is turned ON and the unit switches over the EJECT Mode. (Return with POWER ON)

Power Supply Trouble Shooting Guide

It is highly recommended that a variable isolation transformer which can monitor current be used. (Alternatively a variable AC source which monitors current will do). Read directions below before power is added!


CHECK
Repair method
Check Fuse (F601) is blown out or not.
If fuse is blown out, do repair method #1
YES
#1
NO
Check whether the primary rectifying DC of the Switching power supply has an output. (Reading should be about 168V.
NO
#2
YES
Voltage of the 105V line higher than normal?
YES
#3
NO
The transformer of the power supply makes a higher sound or the oscillation wave form is abnormal.
(E.g. intermittent oscillation)
Connect the positive probe of oscilloscope to the pin 16 of T601, then connect the negative probe to the pin 12. Observe the waveform and check to see if the waveform is out of limit of value shown in Fig.1.
YES
#4
NO
There is no problem on the SW power supply

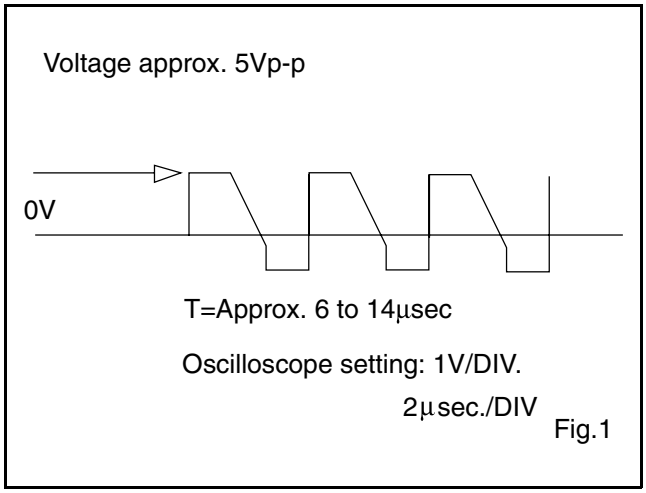


Fig.1

Repair method #1

(Power must be off)

Short circuit in the secondary side. check diode D613, D614, D616, D617 and D618, switching transistor (Q601), control transistor (Q602), diode and resistor replace as necessary.

Disconnect 105V diode (D613), 25V diode (D614), 8V diode (D616), 12V diode (D617), 12V diode (D618) and Check the load continuity of 105V line, 25V line, 8V line, 12V line through a tester (resistance range).

If the tester indicates a lower resistance value around 0 ohm, the line is short-circuited.

Before repairing the switching power supply, find out the short-circuited area of such line and repair it.

If the tester does not indicate any low resistance value (around 0 ohm), no load is short-circuited and there is no problem.

Check for any defective parts while the secondary rectifying diodes are disconnected (D613, D614, D616, D617 and D618) perform a diode check in both forward and reverse directions through a tester.

Repair method #2

Check the primary rectifying diodes (D603-D606) as possible problems. Remove the above mentioned parts and check them. Perform check according to the step 1 and 2 of repair method #1 and check for defects following parts, then if necessary replace with factory originals.

R602 is open or not.

Q601, Q602, D607, D608 and D611 are short or not.

Repair method #3

The feedback circuit which is monitored by the output of D613 105V may not work and this may be regarded as a possible cause, remove IC601 (Photo Coupler), diode (D620) and transistor (Q604) check for defects.

Repair method #4

Check control circuitly which is connecting to Pin 2 and 1 of Switching Transformer T601.

SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

Standard Notes

Warning

Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark " ⚠ " in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

Capacitor Temperature Markings

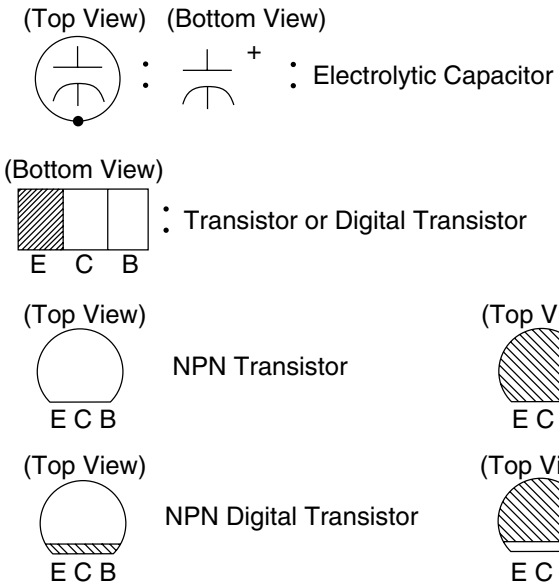
Mark	Capacity change rate	Standard temperature	Temperature range
(B)	±10%	20°C	-25~+85°C
(F)	+30 -80%	20°C	-25~+85°C
(SR)	±15%	20°C	-25~+85°C
(Z)	+30 -80%	20°C	-10~+70°C

Capacitors and transistors are represented by the following symbols.

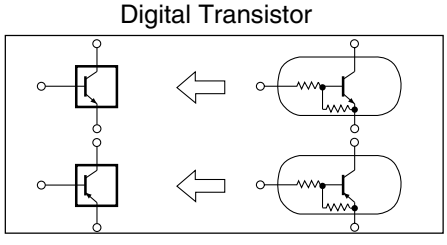
Note:

1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. All resistance values are indicated in ohms ($K=10^3$, $M=10^6$).
3. Resistor wattages are 1/4W or 1/6W unless otherwise specified.
4. All capacitance values are indicated in μF ($P=10^{-6}\mu F$).
5. All voltages are DC voltages unless otherwise specified.

CBA Symbols



Schematic Diagram Symbols



LIST OF CAUTION, NOTES, AND SYMBOLS USED IN THE SCHEMATIC DIAGRAMS ON THE FOLLOWING PAGES:

1. **CAUTION:**

FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.

2. **CAUTION:**

Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

3. **Note:**

(1) Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.

(2) To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

4. Wire Connectors

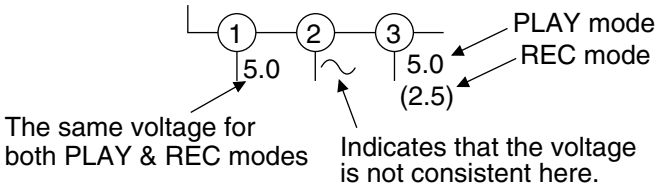
(1) Prefix symbol "CN" means "connector" (can disconnect and reconnect).

(2) Prefix symbol "CL" means "wire-solder holes of the PCB" (wire is soldered directly).

5. Note: Mark "•" is a leadless (chip) component.

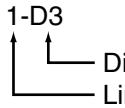
6. Mode: SP/REC

7. Voltage indications for PLAY and REC modes on the schematics are as shown below:



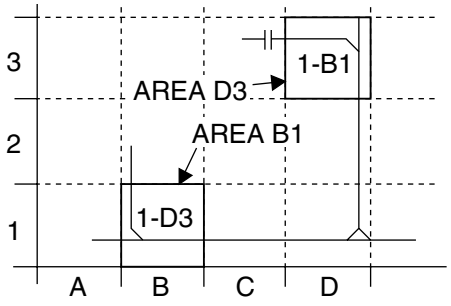
Unit: Volts

8. How to read converged lines



Examples:

1. "1-D3" means that line number "1" goes to area "D3".
2. "1-B1" means that line number "1" goes to area "B1".



9. Test Point Information

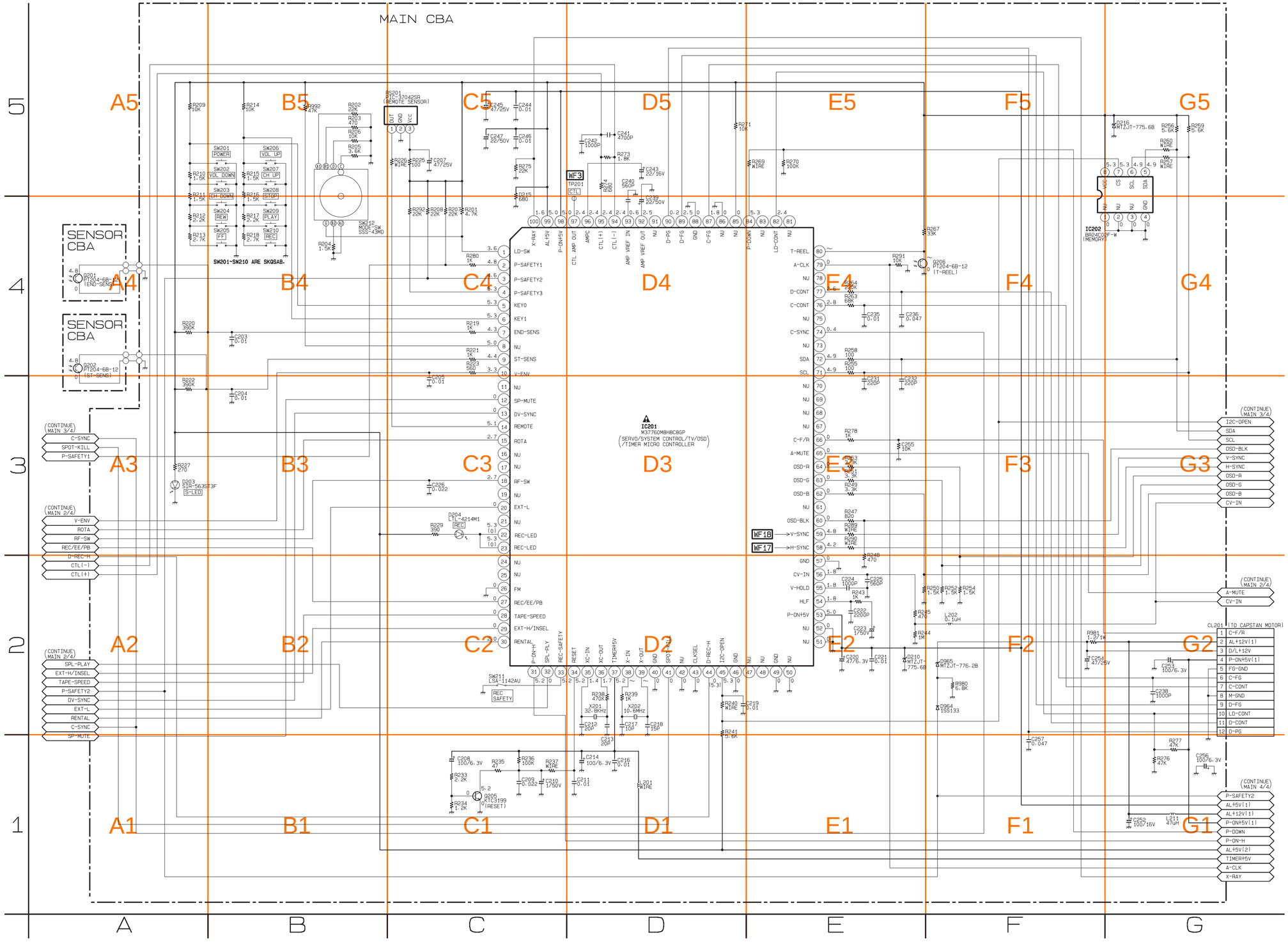
: Indicates a test point with a jumper wire across a hole in the PCB.

: Used to indicate a test point with a component lead on foil side.

: Used to indicate a test point with no test pin.

: Used to indicate a test point with a test pin.

Main 1/4 Schematic Diagram



MAIN 1/4

Ref No.	Position
ICS	
IC201	D-3
IC202	F-4
TRANSISTORS	
Q205	C-1
Q206	F-4
TEST POINTS	
TP201	D-5
CONNECTORS	
CL201	G-2

Main 2/4 Schematic Diagram

REC Video Signal
REC Audio Signal
PB Video Signal
PB Audio Signal

MAIN CBA

MAIN 2/4	
Ref No.	Position
ICS	
IC401	I-2
IC801	M-4
TRANSISTORS	
Q401	K-2
Q402	L-4
Q491	L-2
Q871	I-2
Q872	I-2
Q873	I-1
Q874	I-1
Q875	I-1
TEST POINTS	
TP301	L-2
TP401	H-3
TP402	J-2
TP403	J-4
CONNECTORS	
CL401	H-4
CL402	H-1
CL403	H-1
CN801	N-4

Main 3/4 Schematic Diagram

REC Video Signal
REC Audio Signal
PB Video Signal
PB Audio Signal

MAIN 3/4

Ref No.	Position
ICS	
IC301	R-2
TRANSISTORS	
Q301	R-5
Q302	Q-3
TEST POINTS	
TP001	Q-3
TP302	U-2
CONNECTORS	
CN301	U-1
CN302	U-5

Main 4/4 Schematic Diagram

NOTE :
THE VOLTAGE FOR PARTS IN HOT CIRCUIT IS MEASURED USING HOT GND AS A COMMON TERMINAL.

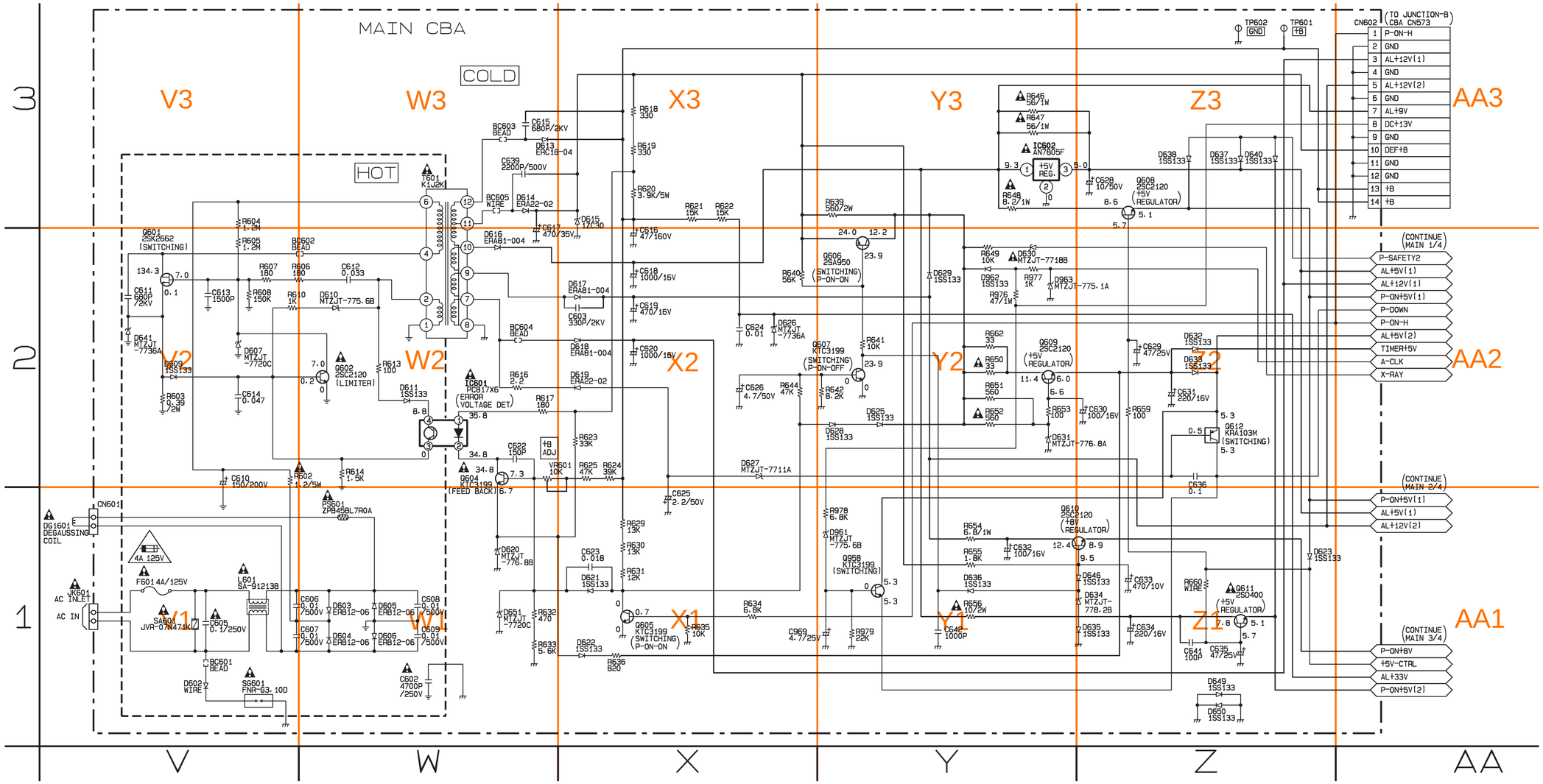
CAUTION !
Fixed voltage power supply circuit is used in this unit.
If Main Fuse (F601) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

4A/125V

CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

VOLTAGE CHART (Power off mode)

Ref. No.	S	D	G
Q601	0.0	137.0	1.8
Ref. No.	E	C	B
Q602	0	3.2	0.5
Q605	0	7.0	0
Q606	7.0	7.0	7.0
Q608	5.0	7.5	5.7
Q609	6.0	6.5	6.6
Q610	0.7	4.7	1.3
Q611	0	2.4	0
Q612	5.3	5.3	0.8



MAIN 4/4

Ref No.	Position
ICS	
IC601	W-2
IC602	Y-3
TRANSISTORS	
Q601	V-2
Q602	W-2
Q604	W-2
Q605	X-1
Q606	Y-2
Q607	Y-2
Q608	Z-3
Q609	Y-2
Q610	Y-1
Q611	Z-1
Q612	Z-2
Q958	Y-1
TEST POINTS	
TP601	Z-3
TP602	Z-3
CONNECTORS	
CN601	V-1
CN602	AA-3
ADJUSTMENT	
VR601	W-2

H.V./DC Power Supply Schematic Diagram

CAUTION !

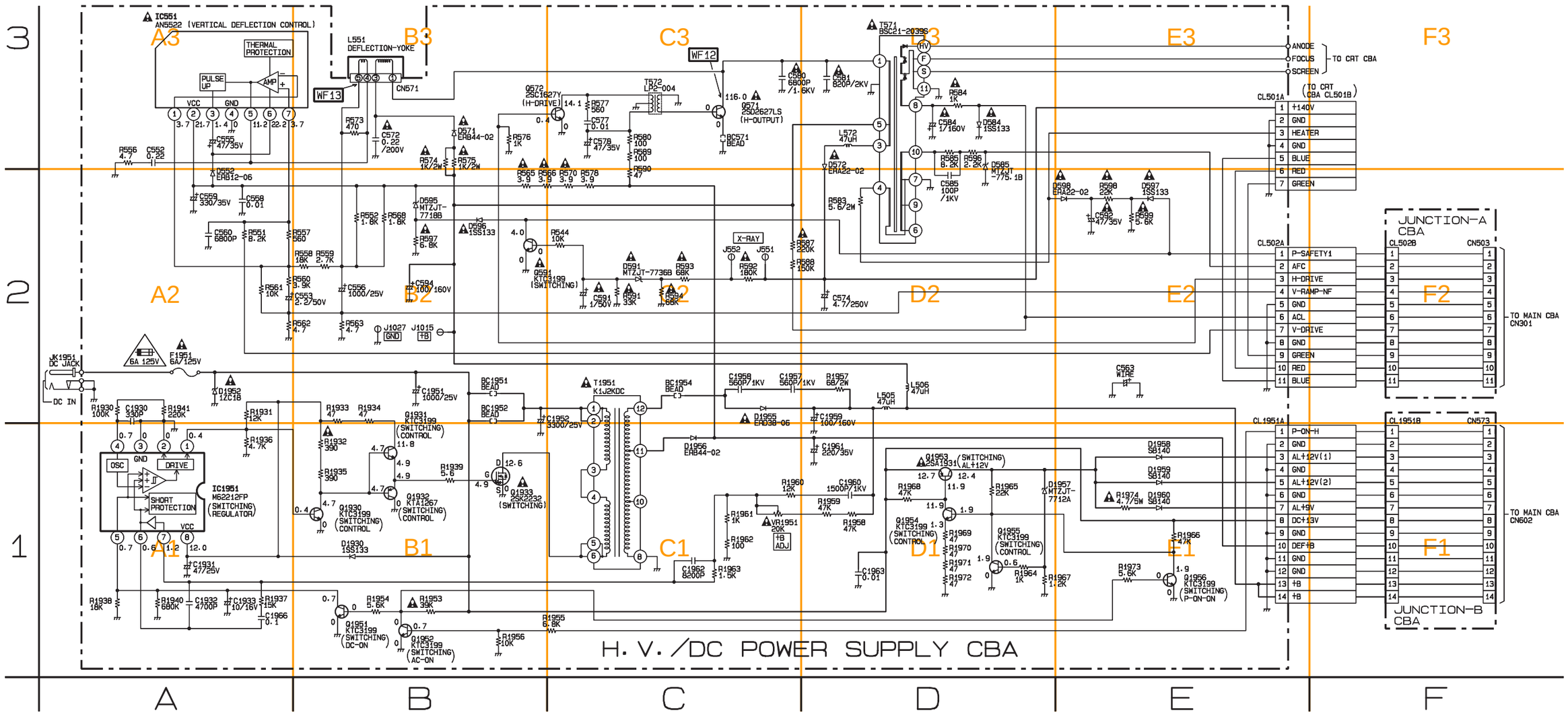
Switching power supply circuit is used in this unit.
If Main Fuse (F1951) is blown, check to see that all components in the power supply circuit are not defective before you connect the DC plug to the DC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES
D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.

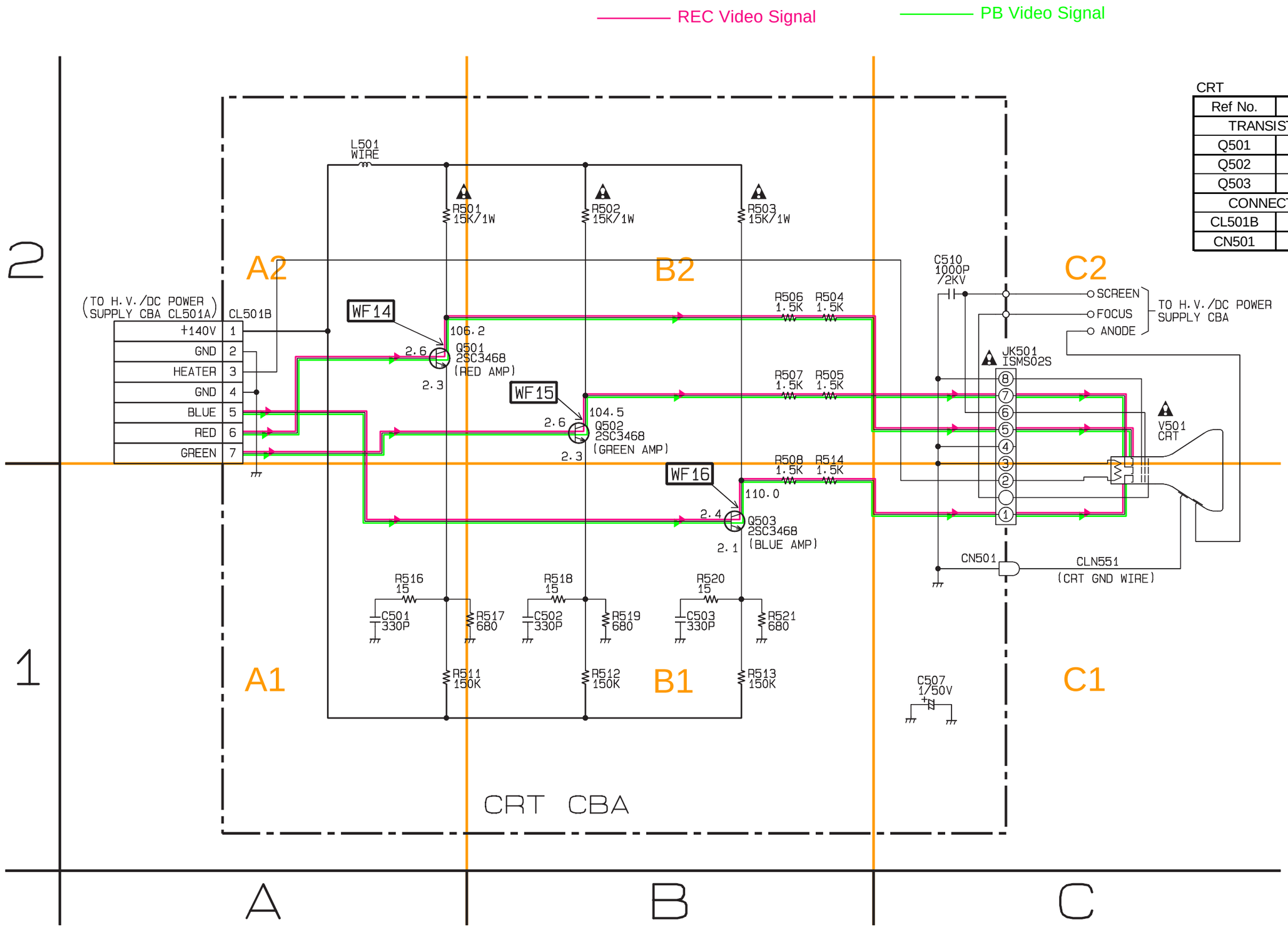
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

H.V./DC POWER SUPPLY

Ref No.	Position	Ref No.	Position
ICS		TRANSISTORS	
IC551	A-3	Q1955	D-1
IC1951	A-1	Q1956	E-1
TRANSISTORS		TEST POINTS	
Q571	C-3	J551	C-2
Q572	C-3	J552	C-2
Q591	B-2	J1015	B-2
Q1930	B-1	J1027	B-2
Q1931	B-1	CONNECTORS	
Q1932	B-1	CL501A	E-3
Q1933	B-1	CL502A	E-2
Q1951	B-1	CL1951A	E-1
Q1952	B-1	CN571	B-3
Q1953	D-1	ADJUSTMENT	
Q1954	D-1	VR1951	C-1



CRT Schematic Diagram

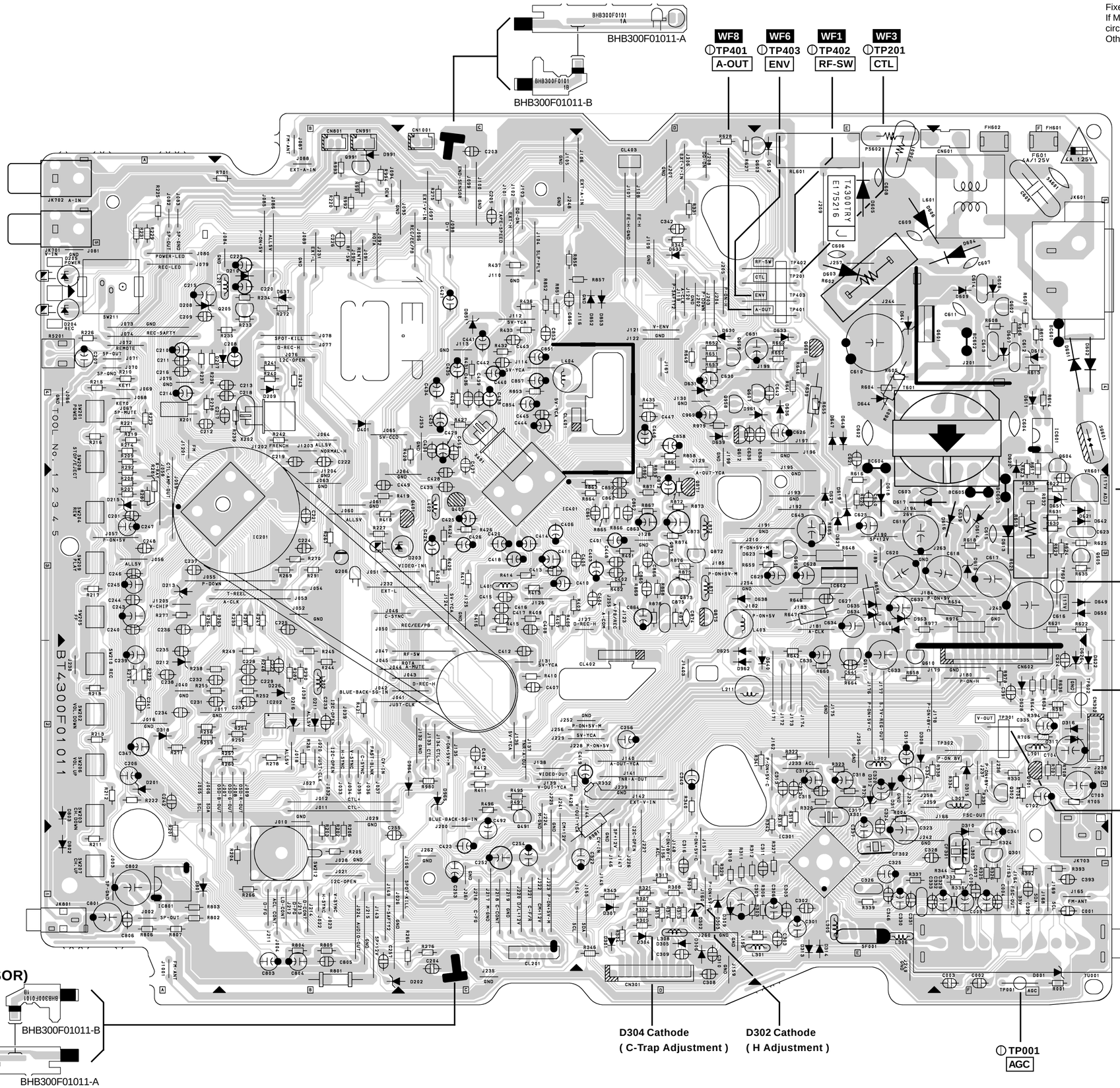


CRT

Ref No.	Position
TRANSISTORS	
Q501	A-2
Q502	B-2
Q503	B-1
CONNECTORS	
CL501B	A-2
CN501	C-1

Main CBA Top View (SC309C, F3809U, 6309CC, EWC0902)

Sensor CBA Top View (END-SENSOR)



CAUTION !
Fixed voltage power supply circuit is used in this unit.
If Main Fuse (F601) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

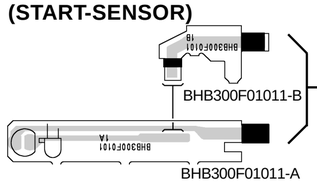
BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT, AN ISOLATION TRANSFORMER MUST BE USED. ALSO, IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY, WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT, A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.

CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

MAIN CBA

Ref No.	Position
ICS	
IC201	B-3
IC202	B-2
IC301	E-1
IC401	C-3
IC601	F-4
IC602	E-3
IC801	A-1
TRANSISTORS	
Q205	B-4
Q206	B-3
Q301	F-1
Q302	F-2
Q401	C-3
Q402	C-3
Q491	C-2
Q601	F-4
Q602	F-4
Q604	F-4
Q605	F-3
Q606	E-4
Q607	D-4
Q608	E-3
Q609	D-4
Q610	E-2
Q611	E-2
Q612	D-4
Q871	D-3
Q872	D-3
Q873	D-3
Q874	D-3
Q875	D-3
Q958	D-4
TEST POINTS	
TP001	F-1
TP201	E-5
TP301	F-2
TP302	F-2
TP401	E-4
TP402	E-5
TP403	E-4
TP601	F-3
TP602	F-2
CONNECTORS	
CL201	C-1
CN301	D-1
CN302	F-2
CL401	C-3
CL402	D-2
CL403	D-5
CN601	F-5
CN602	F-2
CN801	B-5
ADJUSTMENT	
VR601	F-3

Sensor CBA Top View (START-SENSOR)



Main CBA Bottom View (SC309C, F3809U, 6309CC, EWC0902)

CAUTION !
Fixed voltage power supply circuit is used in this unit.
If Main Fuse (F601) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

4A/125V

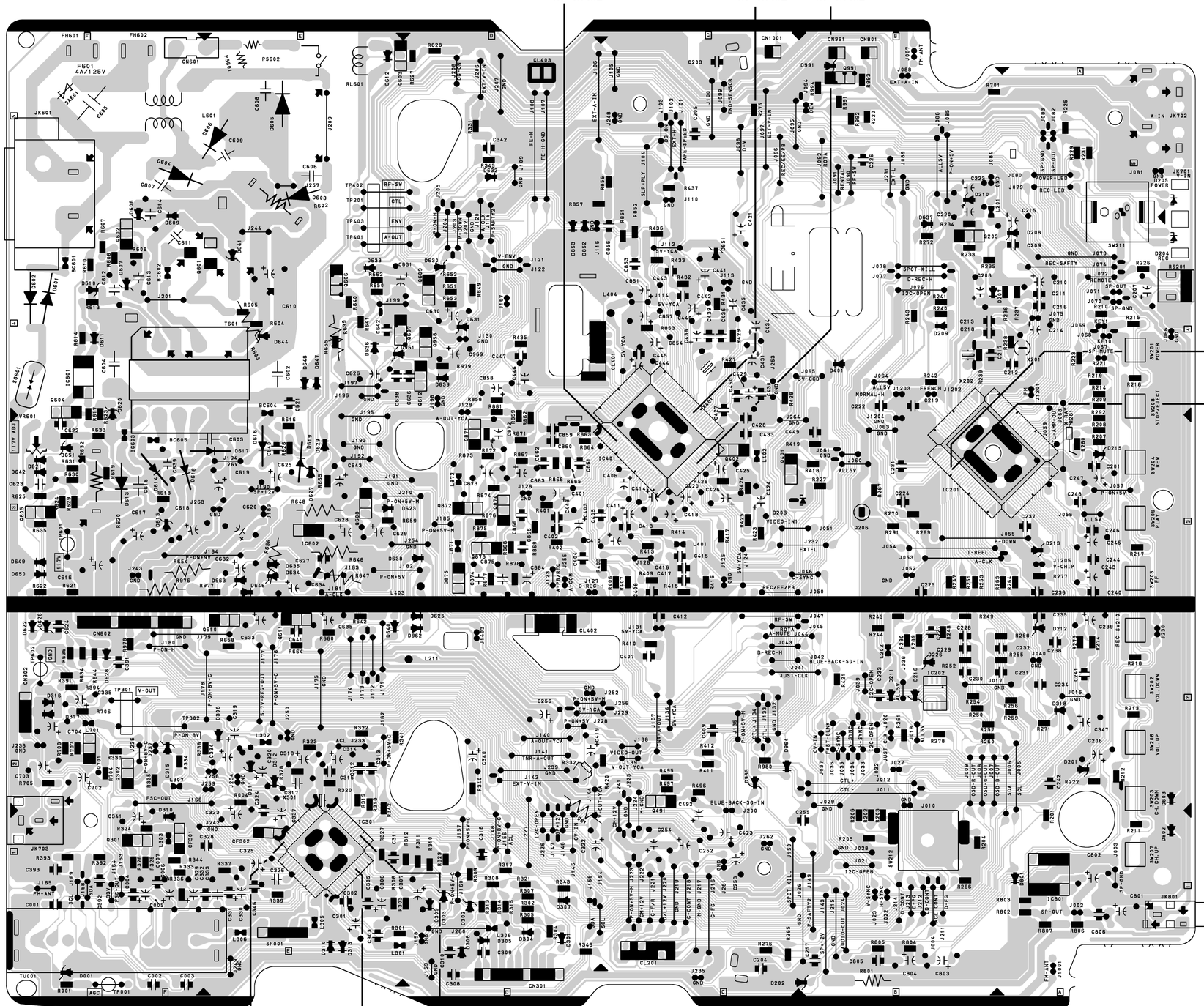
CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT, AN ISOLATION TRANSFORMER MUST BE USED. ALSO, IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY, WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT, A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.

WF9
PIN 7
OF IC401

WF2
PIN 61
OF IC401

WF4
PIN 42
OF IC401



WF17
PIN 58
OF IC201

WF18
PIN 59
OF IC201

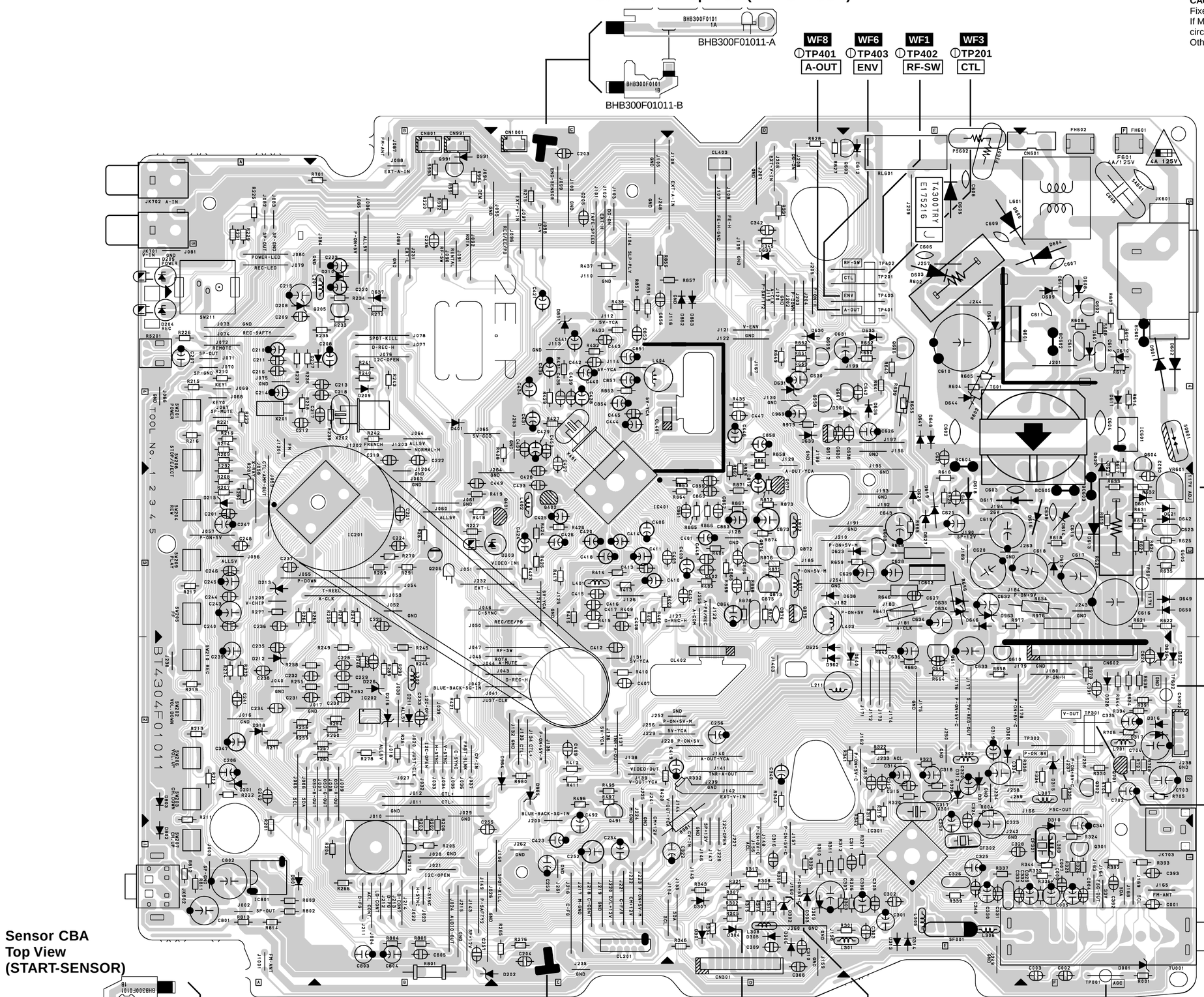
WF7
PIN 48
OF IC301

WF11
PIN 11
OF IC301

WF10
PIN 20
OF IC301

Main CBA Top View (SSC092)

Sensor CBA Top View (END-SENSOR)



CAUTION !
Fixed voltage power supply circuit is used in this unit.
If Main Fuse (F601) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT, AN ISOLATION TRANSFORMER MUST BE USED. ALSO, IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY, WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT, A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.

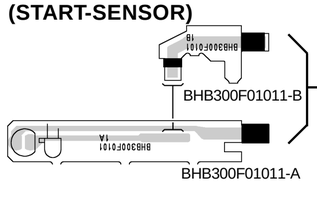
4A/125V

CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

MAIN CBA

Ref No.	Position
ICS	
IC201	B-3
IC202	B-2
IC301	E-1
IC401	C-3
IC601	F-4
IC602	E-3
IC801	A-1
TRANSISTORS	
Q205	B-4
Q206	B-3
Q301	F-1
Q302	F-2
Q401	C-3
Q402	C-3
Q491	C-2
Q601	F-4
Q602	F-4
Q604	F-4
Q605	F-3
Q606	E-4
Q607	D-4
Q608	E-3
Q609	D-4
Q610	E-2
Q611	E-2
Q612	D-4
Q871	D-3
Q872	D-3
Q873	D-3
Q874	D-3
Q875	D-3
Q958	D-4
TEST POINTS	
TP001	F-1
TP201	E-5
TP301	F-2
TP302	F-2
TP401	E-4
TP402	E-5
TP403	E-4
TP601	F-3
TP602	F-2
CONNECTORS	
CL201	C-1
CN301	D-1
CN302	F-2
CL401	C-3
CL402	D-2
CL403	D-5
CN601	F-5
CN602	F-2
CN801	B-5
ADJUSTMENT	
VR601	F-3

Sensor CBA Top View (START-SENSOR)



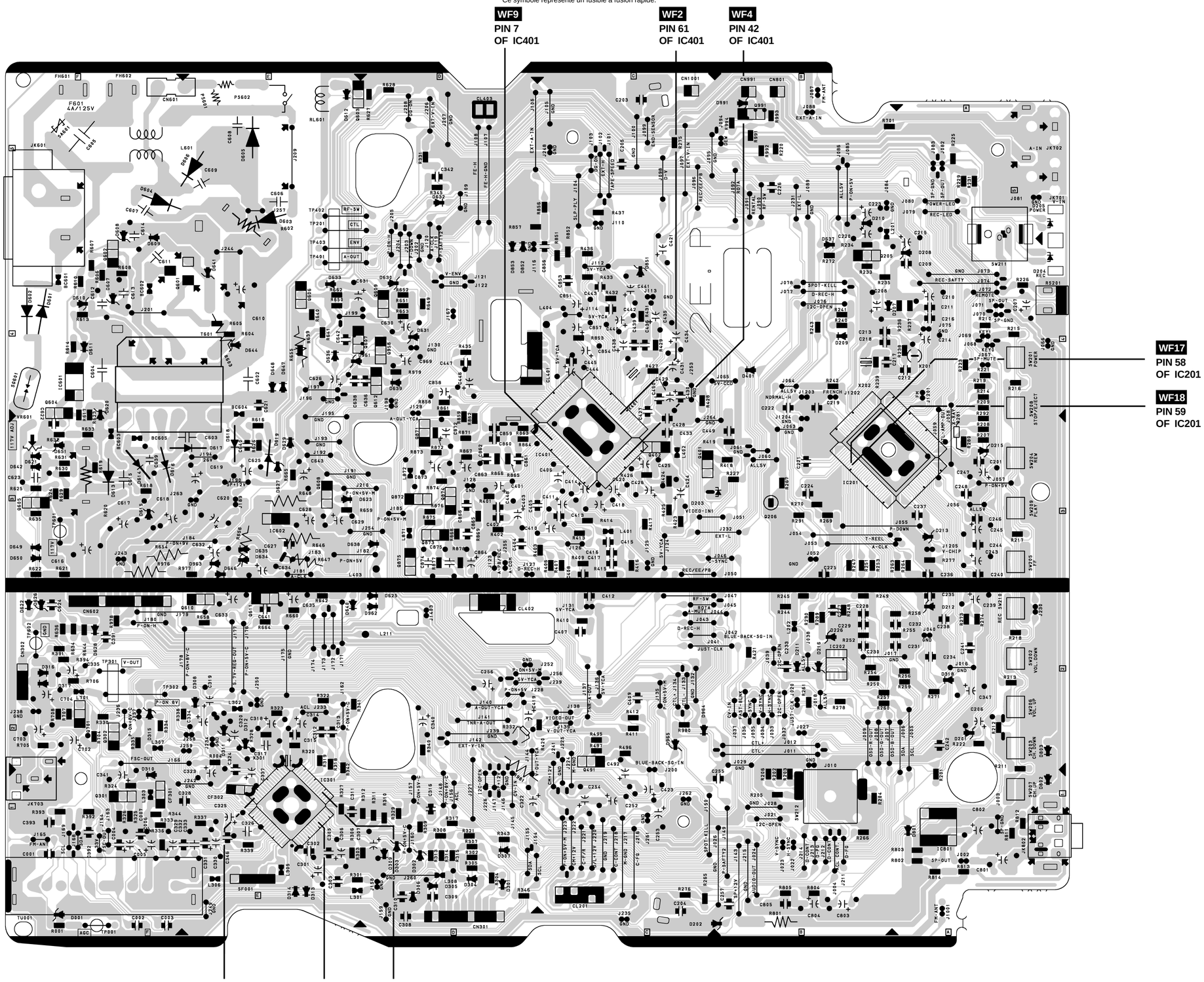
Main CBA Bottom View (SSC092)

CAUTION !
Fixed voltage power supply circuit is used in this unit.
If Main Fuse (F601) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

4A/125V

CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES
D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

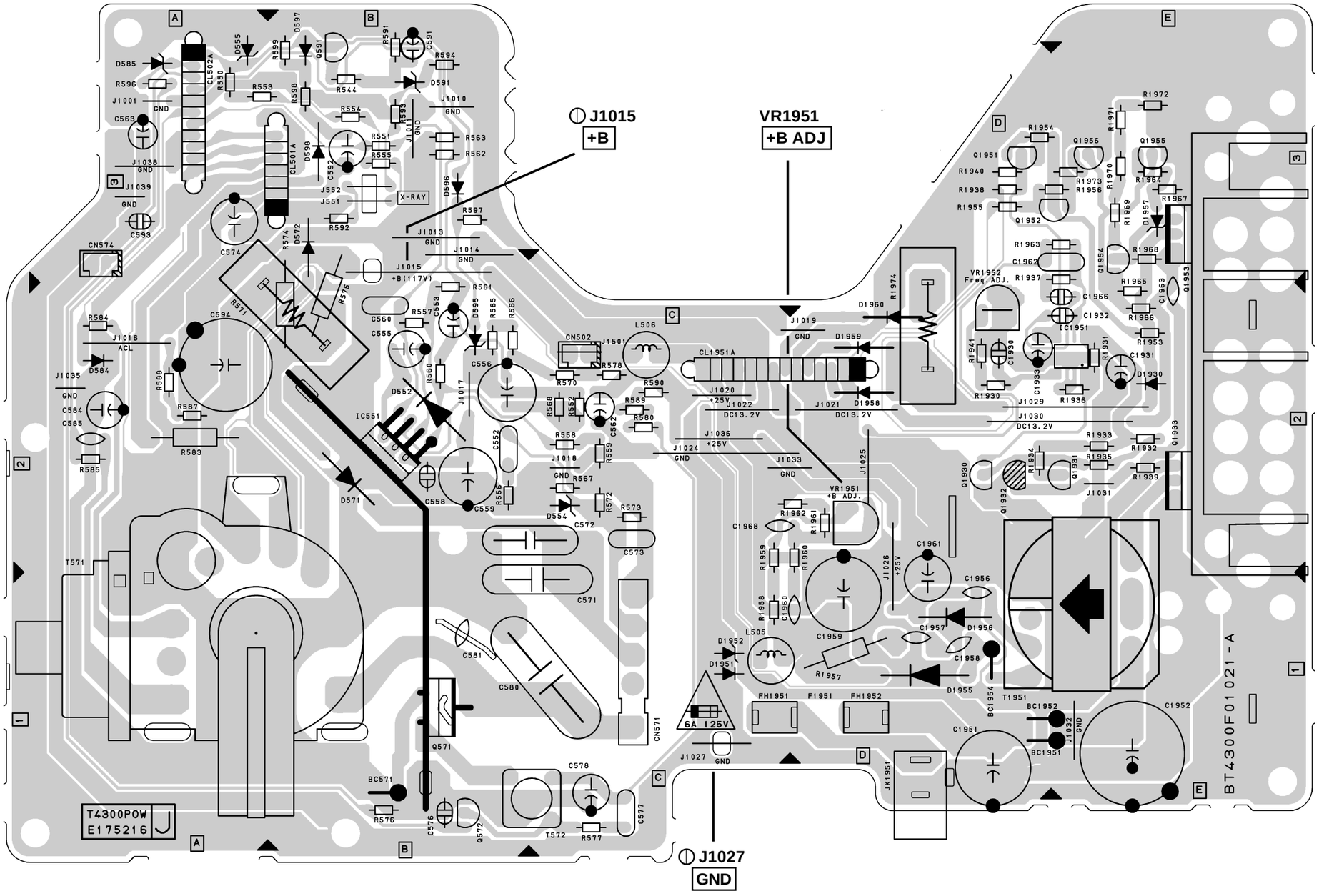
BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT, AN ISOLATION TRANSFORMER MUST BE USED. ALSO, IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY, WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT, A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.



H.V. / DC Power Supply CBA Top View

CAUTION !
Fixed voltage power supply circuit is used in this unit.
If Main Fuse (F1951) is blown, check to see that all components in the power supply circuit are not defective before you connect the DC plug to the DC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES
D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.
6A/125V
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."



H.V./DC POWER SUPPLY CBA

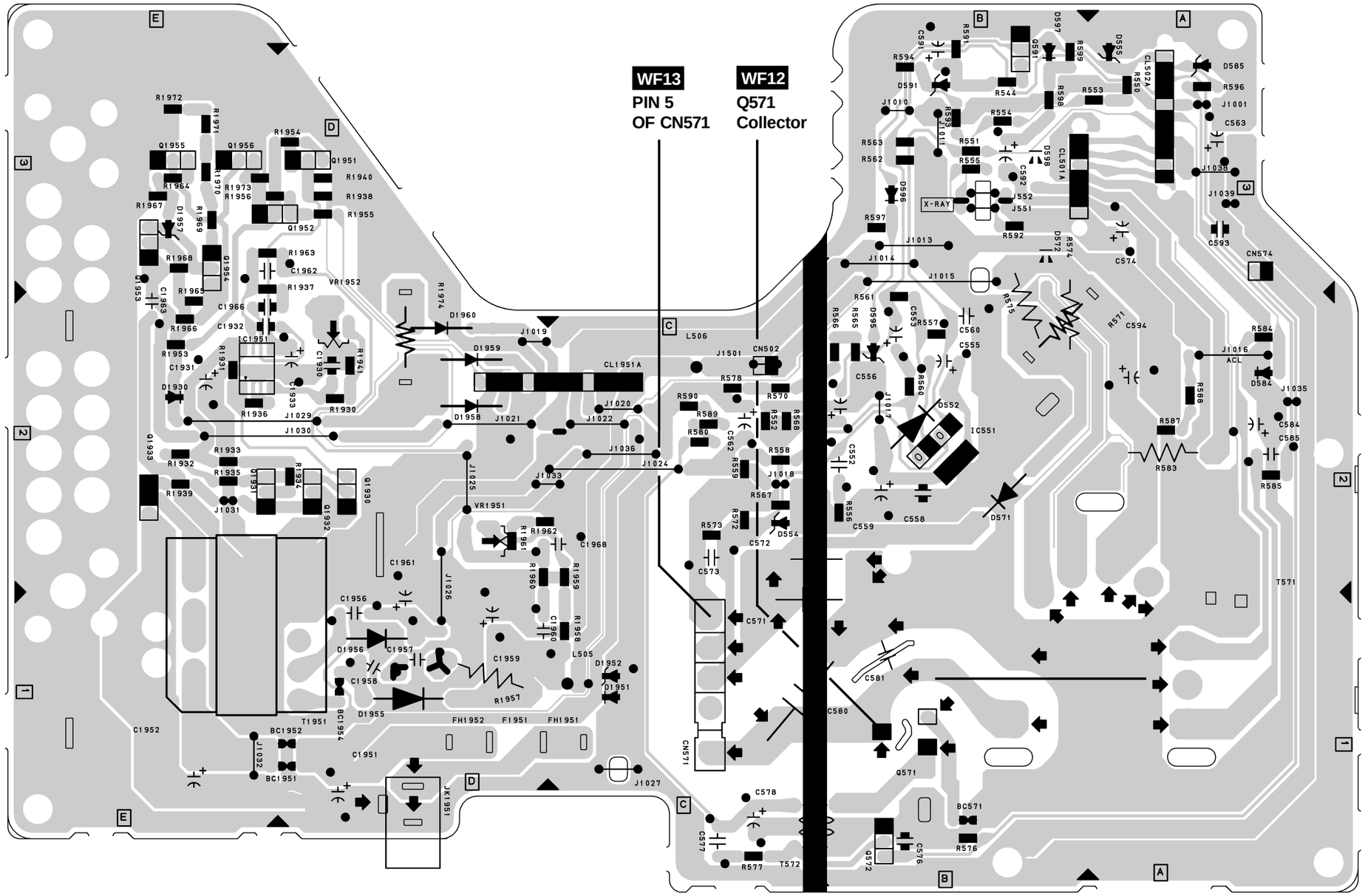
Ref No.	Position
ICS	
IC551	B-2
IC1951	E-2
TRANSISTORS	
Q571	B-1
Q572	B-1
Q591	B-3
Q1930	D-2
Q1931	E-2
Q1932	D-2
Q1933	E-2
Q1951	D-3
Q1952	D-3
Q1953	E-3
Q1954	E-3
Q1955	E-3
Q1956	E-3
TEST POINTS	
J551	B-3
J552	B-3
J1015	B-3
J1027	C-1
CONNECTORS	
CL501A	B-3
CL502A	A-3
CL1951A	C-2
CN571	C-1
ADJUSTMENT	
VR1951	D-2

H.V. / DC Power Supply CBA Bottom View

CAUTION !
Fixed voltage power supply circuit is used in this unit.
If Main Fuse (F1951) is blown, check to see that all components in the power supply circuit are not defective before you connect the DC plug to the DC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.

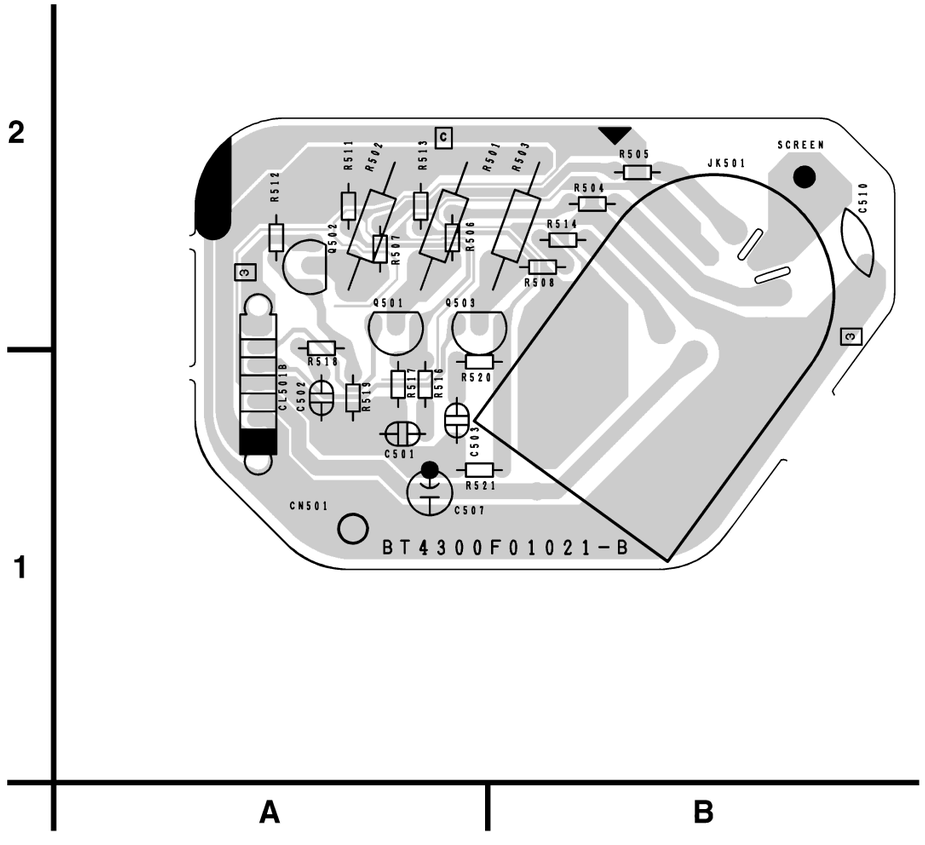
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."



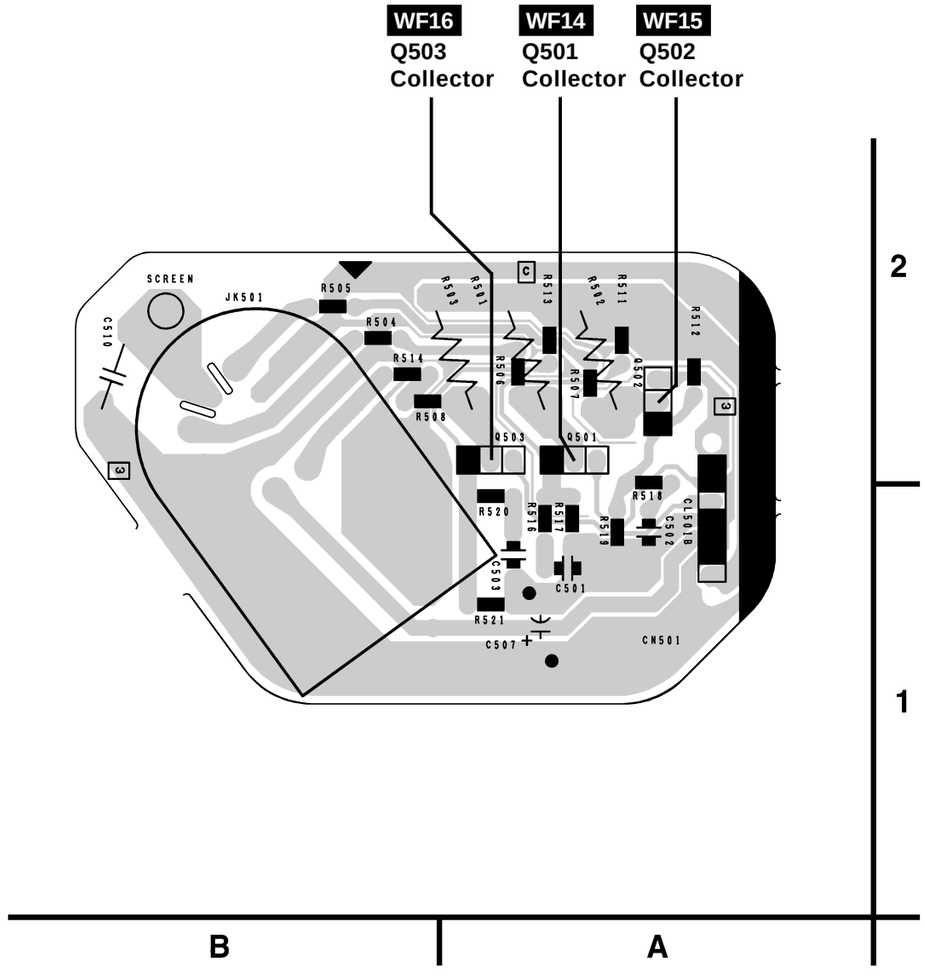
CRT CBA Top View

CRT CBA

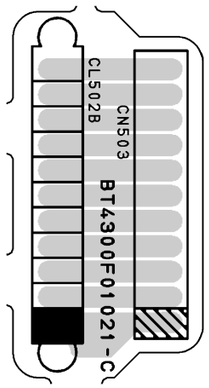
Ref No.	Position
TRANSISTORS	
Q501	A-2
Q502	A-2
Q503	A-2
CONNECTORS	
CL501B	A-1
CN501	A-1



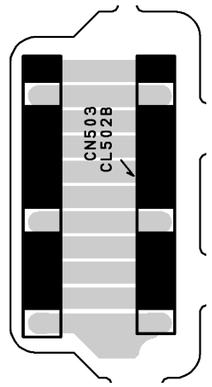
CRT CBA Bottom View



Junction-A CBA
Top View

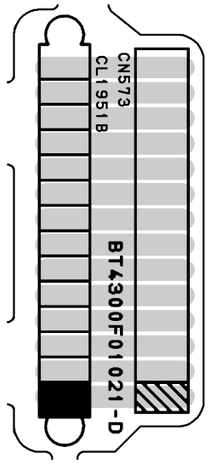


Junction-A CBA
Bottom View

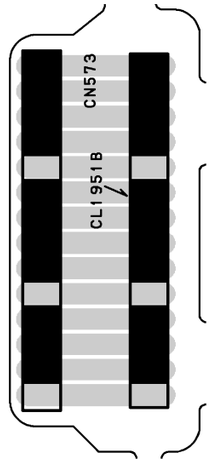


BT4300F01021-C

Junction-B CBA
Top View



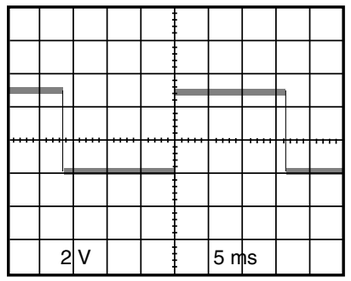
Junction-B CBA
Bottom View



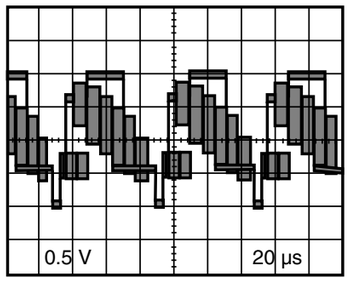
BT4300F01021-D

WAVEFORMS

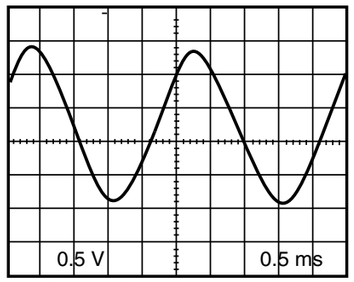
WAVEFORM NOTES
INPUT: NTSC COLOR BAR SIGNAL
OTHER CONTROLS: CENTER POSITION
VOLTAGES SHOWN ARE RANGE OF OSCILLOSCOPE SETTING



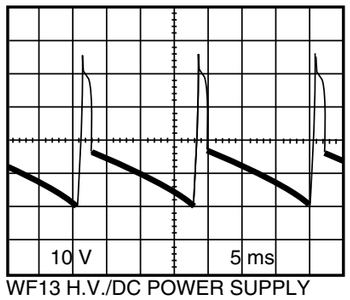
WF1 MAIN 2/4 SCHEMATIC DIAGRAM
TP402 RF-SW



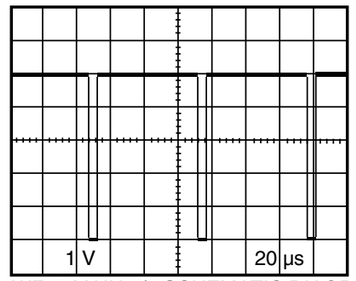
WF5 MAIN 2/4 SCHEMATIC DIAGRAM
TP301 V-OUT



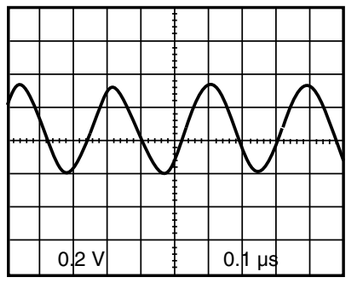
WF9 MAIN 2/4 SCHEMATIC DIAGRAM
IC401 PIN 7



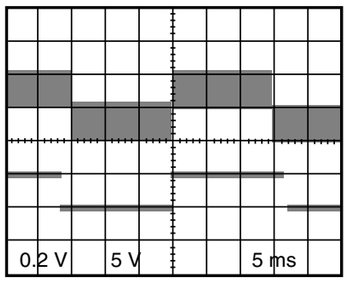
WF13 H.V./DC POWER SUPPLY
SCHEMATIC DIAGRAM
CN571 PIN 5



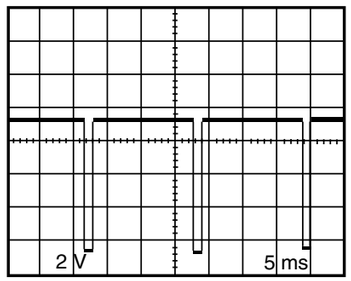
WF17 MAIN 1/4 SCHEMATIC DIAGRAM
IC201 PIN 58



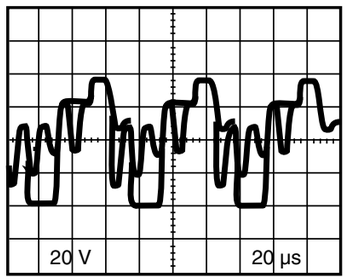
WF2 MAIN 2/4 SCHEMATIC DIAGRAM
IC401 PIN 61



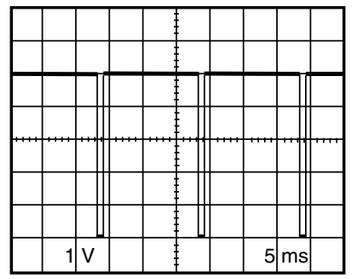
Upper: WF6 Lower: WF1
MAIN 2/4 SCHEMATIC DIAGRAM
TP403 ENV



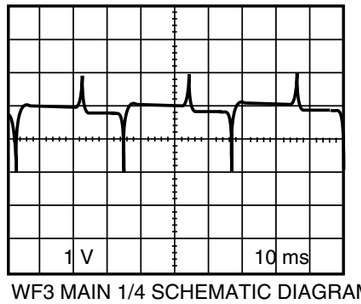
WF10 MAIN 3/4 SCHEMATIC DIAGRAM
IC301 PIN 20



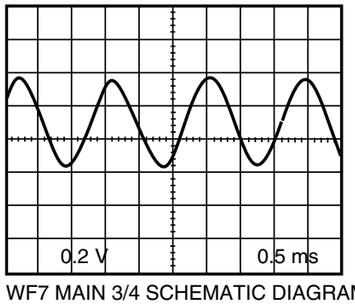
WF14 CRT SCHEMATIC DIAGRAM
Q501 COLLECTOR



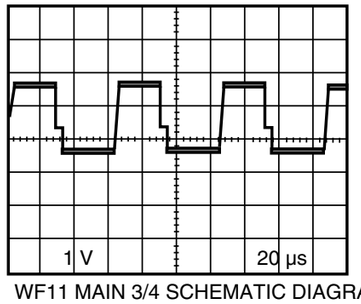
WF18 MAIN 1/4 SCHEMATIC DIAGRAM
IC201 PIN 59



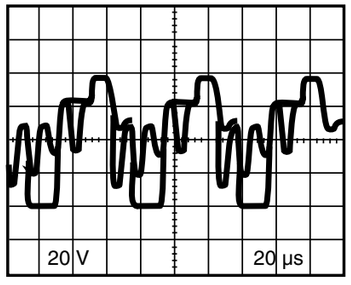
WF3 MAIN 1/4 SCHEMATIC DIAGRAM
TP201 CTL



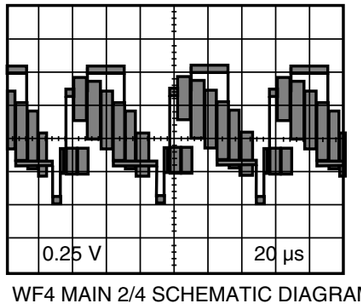
WF7 MAIN 3/4 SCHEMATIC DIAGRAM
IC301 PIN 48



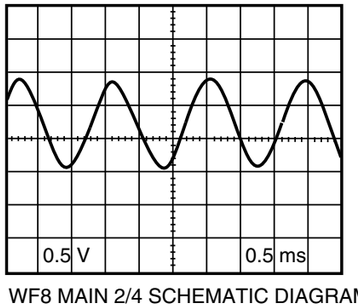
WF11 MAIN 3/4 SCHEMATIC DIAGRAM
IC301 PIN 11



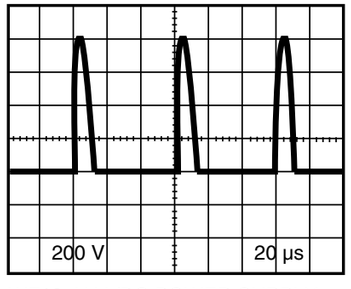
WF15 CRT SCHEMATIC DIAGRAM
Q502 COLLECTOR



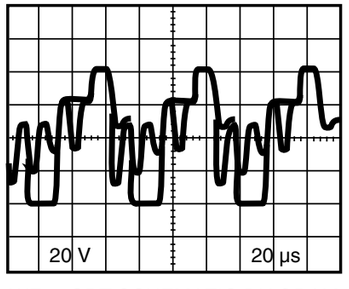
WF4 MAIN 2/4 SCHEMATIC DIAGRAM
IC401 PIN 42



WF8 MAIN 2/4 SCHEMATIC DIAGRAM
TP401 A-OUT

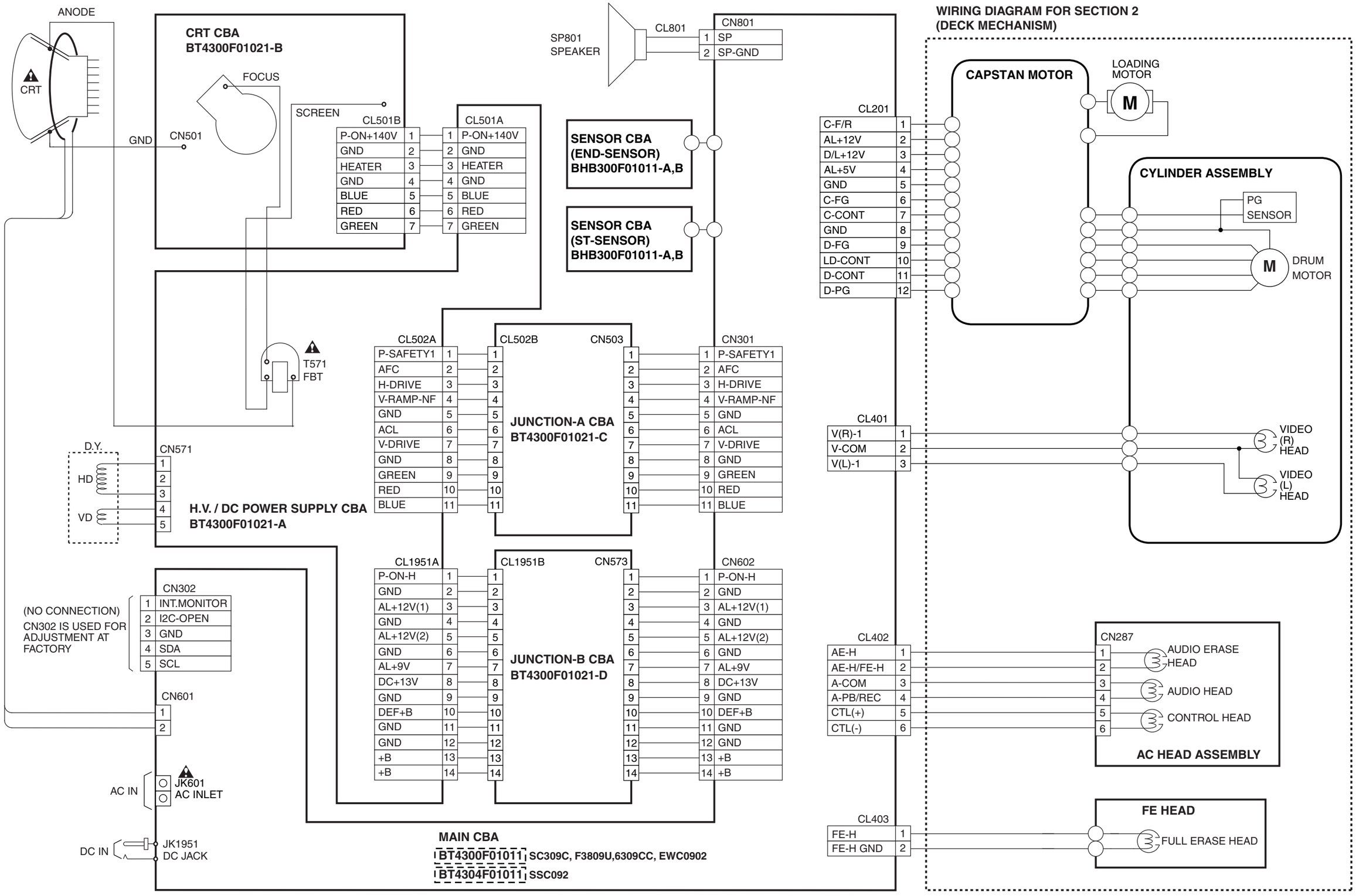


WF12 H.V./DC POWER SUPPLY
SCHEMATIC DIAGRAM
Q571 COLLECTOR



WF16 CRT SCHEMATIC DIAGRAM
Q503 COLLECTOR

WIRING DIAGRAM



SYSTEM CONTROL TIMING CHARTS

Chart 1

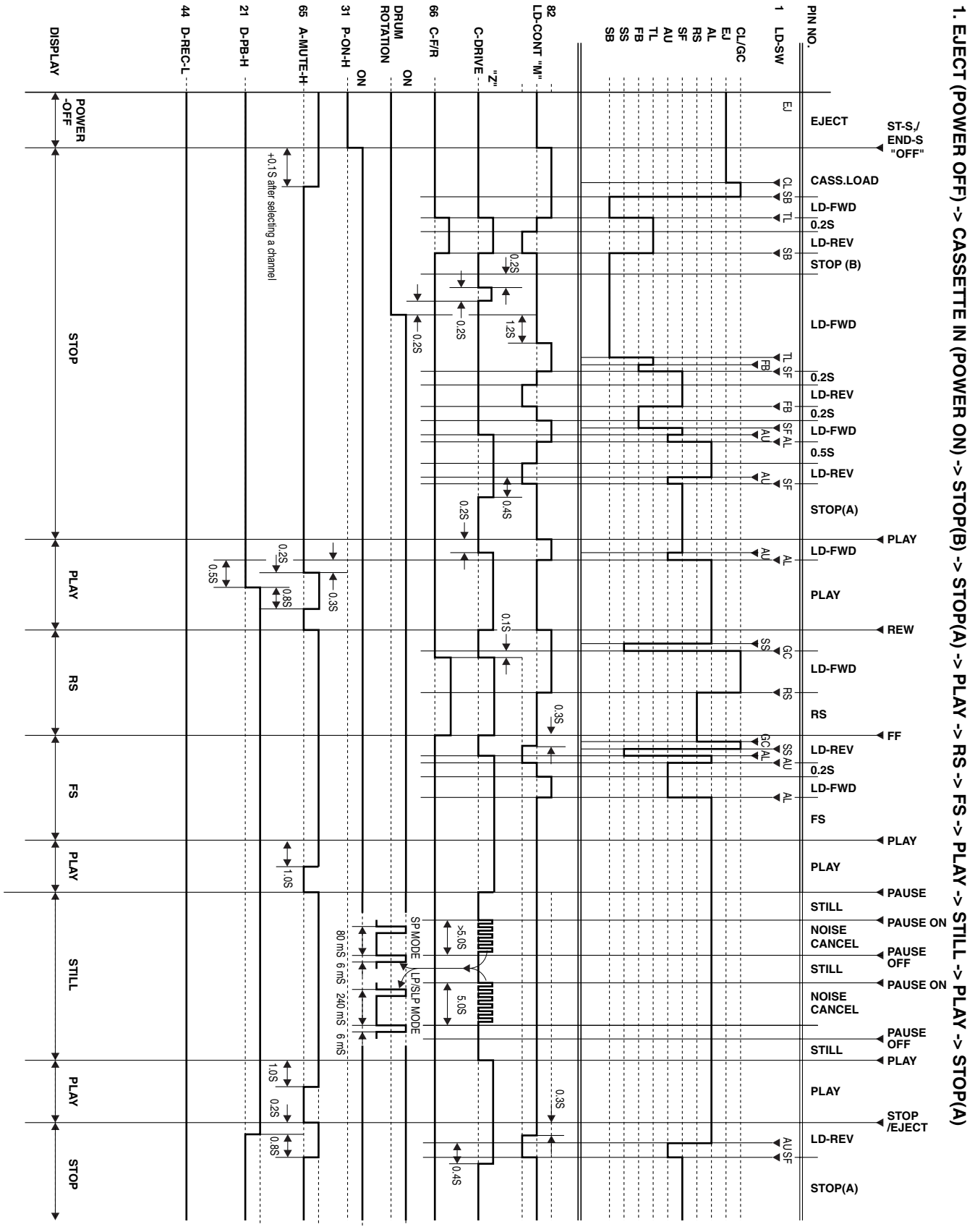
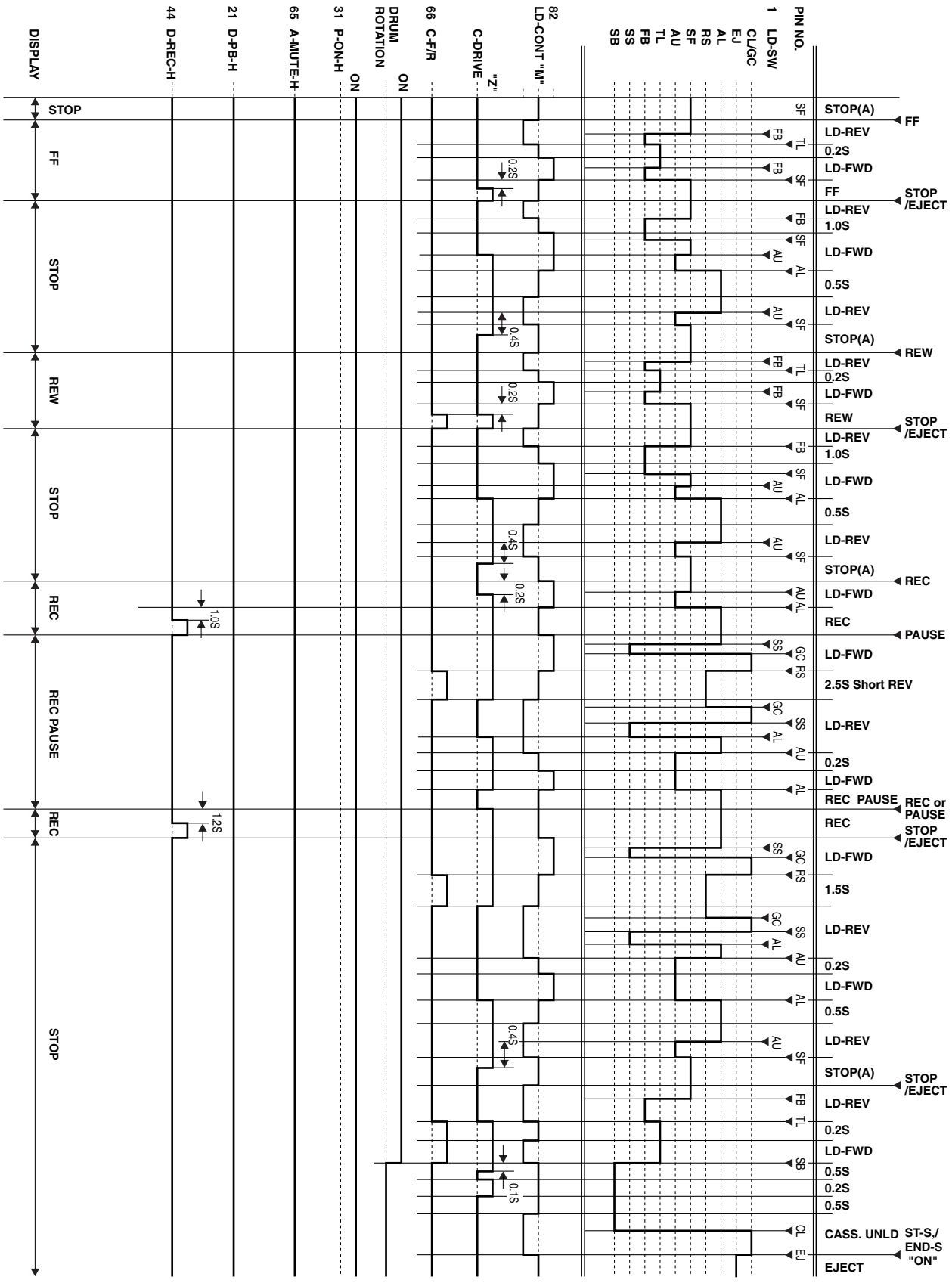


Chart 2


2. STOP(A) -> FF -> STOP(A) -> REW -> STOP(A) -> REC -> PAUSE -> PAUSE or REC -> STOP(A) -> EJECT
PIN NO.
1 LD-SW
CL/GC
EJ
AL
RS
SF
AU
TL
FB
SS
SB
82 LD-CONT "M"
C-DRIVE "Z"
66 C-F/R
DRUM ROTATION
31 P-ON-H
65 A-MUTE-H
21 D-PB-H
44 D-REC-H
DISPLAY
STOP
FF
STOP
REW
STOP
REC
REC PAUSE
REC
STOP
STOP(A)
LD-REV
0.2S
LD-FWD
FF
STOP /EJECT
LD-REV
1.0S
LD-FWD
0.5S
LD-REV
STOP(A)
REW
LD-REV
0.2S
LD-FWD
REW
STOP /EJECT
LD-REV
1.0S
LD-FWD
0.5S
LD-REV
STOP(A)
REC
LD-FWD
REC
PAUSE
LD-FWD
2.5S Short REV
LD-REV
0.2S
LD-FWD
REC PAUSE
REC or PAUSE
REC
STOP /EJECT
LD-FWD
1.5S
LD-REV
0.2S
LD-FWD
0.5S
LD-REV
STOP(A)
STOP /EJECT
LD-REV
0.2S
LD-FWD
0.5S
0.2S
0.5S
CASS. UNLD
ST-S,/ END-S "ON"
EJECT
0.2S
0.4S
0.2S
0.4S
0.2S
0.4S
0.1S
1.0S
1.2S

IC PIN FUNCTION DESCRIPTIONS

IC 201 (TV/VCR Micro Computer)

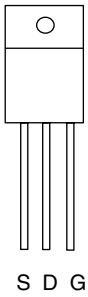
"H" ≥ 4.5V, "L" ≤ 1.0V

Pin No.	IN/ OUT	Signal Name	Function
1	IN	LD-SW	Loading Switch Input
2	IN	P-SAFETY 1	Power Supply Failure Detection 1
3	IN	P-SAFETY 2	Power Supply Failure Detection 2
4	IN	P-SAFETY 3	Power Supply Failure Detection 3
5	IN	KEY0	Key 0 Input
6	IN	KEY1	Key 1 Input
7	IN	END-SENS	End-Sensor
8	-	NU	Not Used
9	IN	ST-SENS	Start-Sensor
10	IN	V-ENV	Video Envelope Input
11	-	NU	Not Used
12	OUT	SP-MUTE	Speaker Mute Output
13	IN/ OUT	D-V SYNC	Artificial V-Sync Output
14	IN	REMOTE	Remote Signal Input
15	OUT	ROTA	Color Phase Rotary Changeover SIgnal
16	-	NU	Not Used
17	-	NU	Not Used
18	OUT	RF-SW	Video Head Switching Pulse
19	-	NU	Not Used
20	OUT	EXT-L	External Input or Playback = Output
21	OUT	D-PB-H	Playback Output
22	OUT	REC-LED	Recording LED Control Signal
23	OUT	REC-LED	Recording LED Control Signal
24	-	NU	Not Used
25	-	NU	Not Used
26	-	NU	Not Used
27	IN/ OUT	REC/EE/PB	YCA IC Mode Output
28	IN/ OUT	TAPE-SPEED	Tape Speed Control Output
29	OUT	EXT-H/ INSEL	External Input or Playback SIgnal Output/Input Selector Control Signal
30	IN/ OUT	RENTAL	Rental Position Control Signal
31	OUT	P-ON-H	Power On Signal at High
32	OUT	SPL-PLAY	Special Playback Control Signal
33	IN	REC-SAFETY	Record Protection Tab Detection
34	IN	RESET	System Reset Signal (Reset="L")
35	IN	XC-IN	Sub Clock 32 kHz
36	OUT	XC-OUT	Sub Clock 32 kHz
37	-	TIMER+5V	Vcc
38	IN	X-IN	Main Clock Input
39	OUT	X-OUT	Main Clock Output
40	-	GND	GND
41	OUT	SPOT-KILL	Counter-measure for Spot
42	-	NU	Not Used
43	IN	CLKSEL	Clock Select (GND)
44	OUT	D-REC-H	Delayed Record Signal
45	IN	I2C-OPEN	White Balance Adjust Mode Judgment
46	-	GND	GND
47	-	NU	Not Used
48	-	NU	Not Used
49	-	GND	OSD GND
50	-	NU	Not Used
51	-	NU	Not Used
52	-	NU	Not Used
53	-	P-ON+5V	OSD Vcc
54	-	HLF	HLF
55	IN	V-HOLD	VHOLD
56	IN	CV-IN	Video Signal Input
57	-	GND	GND
58	IN	H-SYNC	H-SYNC Input
59	IN	V-SYNC	V-SYNC Input
60	OUT	OSD-BLK	Output for Picture Cut off
61	-	NU	Not Used

Pin No.	IN/ OUT	Signal Name	Function
62	OUT	OSD-B	Blue Output
63	OUT	OSD-G	Green Output
64	OUT	OSD-R	Red Output
65	OUT	A-MUTE	Audio Mute Output
66	OUT	C-F/R	Capstan Motor FWD/REV Control Signal
67	-	NU	Not Used
68	-	NU	Not Used
69	-	NU	Not Used
70	-	NU	Not Used
71	OUT	SCL	E2PROM/CHROMA IC Tuner Communication Clock
72	IN/ OUT	SDA	E2PROM/CHROMA IC Tuner Communication Data
73	-	NU	Not Used
74	IN	C-SYNC	C-Sync Input
75	-	NU	Not Used
76	OUT	C-CONT	Capstan Motor Control Signal
77	OUT	D-CONT	Drum Motor Control Signal
78	OUT	ACL-CONT	ACL Control Signal
79	IN	A-CLK	Auto Clock
80	IN	T-REEL	Take Up Reel Rotation Signal
81	-	NU	Not Used
82	OUT	LD-CONT	Loading Motor Control Signal
83	-	NU	Not Used
84	OUT	P-DOWN	Power Voltage Down Detector Signal
85	-	NU	Not Used
86	-	NU	Not Used
87	IN	C-FG	Capstan Motor Rotation Detection Pulse
88	-	GND	GND (AMP)
89	IN	D-FG	Drum Motor Rotation Detection Pulse
90	IN	D-PG	Drum Motor Pulse Generator
91	-	NU	Not Used
92	OUT	AMP VREF OUT	Standard Voltage Output
93	IN	AMP VREF IN	Standard Voltage Input
94	IN/ OUT	CTL (-)	CTL (-)
95	IN/ OUT	CTL (+)	CTL (+)
96	-	AMPC	AMPC
97	OUT	CTL AMP OUT	Control Amp Output
98	-	P-ON+5V	Power Supply for AMP
99	-	AL+5V	A/D, D/A Standard Voltage
100	IN	X-RAY	X-Ray Protection

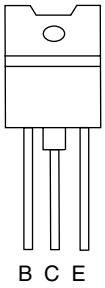
LEAD IDENTIFICATIONS

2SK2662



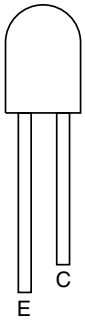
S: Souce
D: Drain
G: Gate

2SD2627LS-FEC-YB11

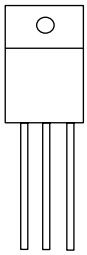


E: Emitter
C: Collector
B: Base

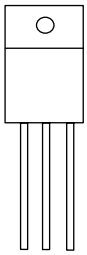
PT204-6B-12
MID-32A22



FS30KMJ-06
2SK2232



2SA1931
2SA1469(R)



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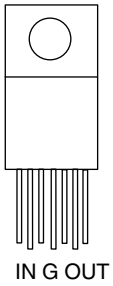
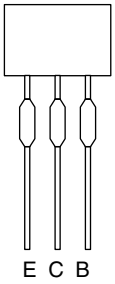
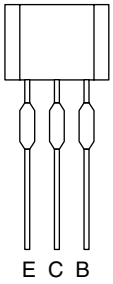




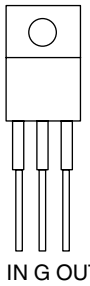
KRA103M
2SC1815-GR(TPE2)
2SC3331(T,U)
2SC2120-(O,Y)(TPE2)
KTC3203(Y)
KTA1266(GR)



2SC1627Y-TPE2
2SA950(Y,O)
KTA1271(Y)
2SC2482 TPE6
2SC3468(E,D)-AE
2SA1175(F)
KTA1267(GR)
KTC3198(GR)

BN1F4M-T
KTC3199(GR)
2SC2271(E)-AE

KIA7805API
KA7805A
AN7805F



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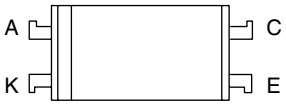
PC817X6



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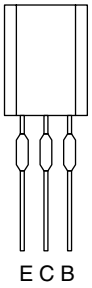
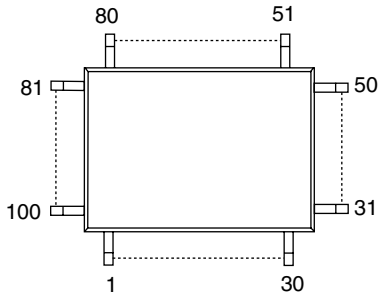
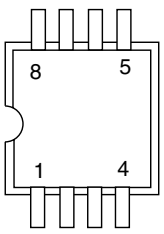


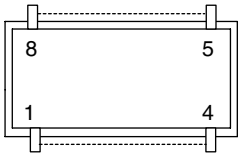
M37760M8H8C8GP
LA71091M



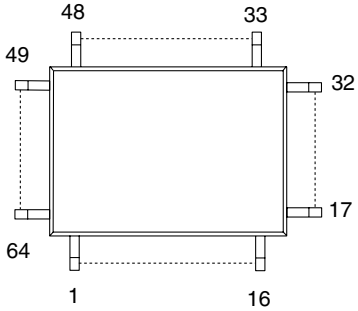
BR24C02F-W
BR24C02F
AT24C02N-10SC
M24C02-MN6



LA4224
M6221FP



M61210FP-R60*
M61210FP-R61
M61210FP-R62*



DECK MECHANISM SECTION

9" COLOR TV/VCR COMBINATION

SC309C/F3809U/6309CC /EWC0902/SSC092

Sec. 2: Deck Mechanism Section

- **Standard Maintenance**
- **Alignment for Mechanism**
- **Disassembly/Assembly of Mechanism**
- **Alignment Procedures of Mechanism**

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Service Fixtures and Tools 2-2-1
Mechanical Alignment Procedures 2-3-1
Disassembly / Assemly Procedures of Deck Mechanism 2-4-1
Alignment Procedures of Mechanism 2-4-9

STANDARD MAINTENANCE

Service Schedule of Components

H: Hours ❍: Check ●: Change

Deck		Periodic Service Schedule			
Ref.No.	**Part Name**	**1,000 H**	**2,000 H**	**3,000 H**	**4,000 H**
B2	Cylinder Assembly	❍	●	❍	●
B3	Loading Motor Assembly			●	
B8	Pulley Assembly		●		●
B27	Tension Lever Sub Assembly		●		●
B31	AC Head Assembly			●	
B573,B574	Reel S, Reel T			●	
B37	Capstan Motor		●		●
B52	Cap Belt		●		●
*B73	FE Head			●	
B133	Idler Assembly		●		●
B410	Pinch Arm (A) Assembly		●		●
B414	M Brake S Assembly		●		●
B416	M Brake T Assembly		●		●
B525	LDG Belt		●		●

Notes:

1. Clean all parts for the tape transport (Upper Drum with Video Head / Pinch Roller / Audio Control Head / Full Erase Head) using 90% Isopropyl Alcohol.
2. After cleaning the parts, do all DECK ADJUSTMENTS.
3. For the reference numbers listed above, refer to Deck Exploded Views.

* B73 ------ Recording Model only

Cleaning

Cleaning of Video Head

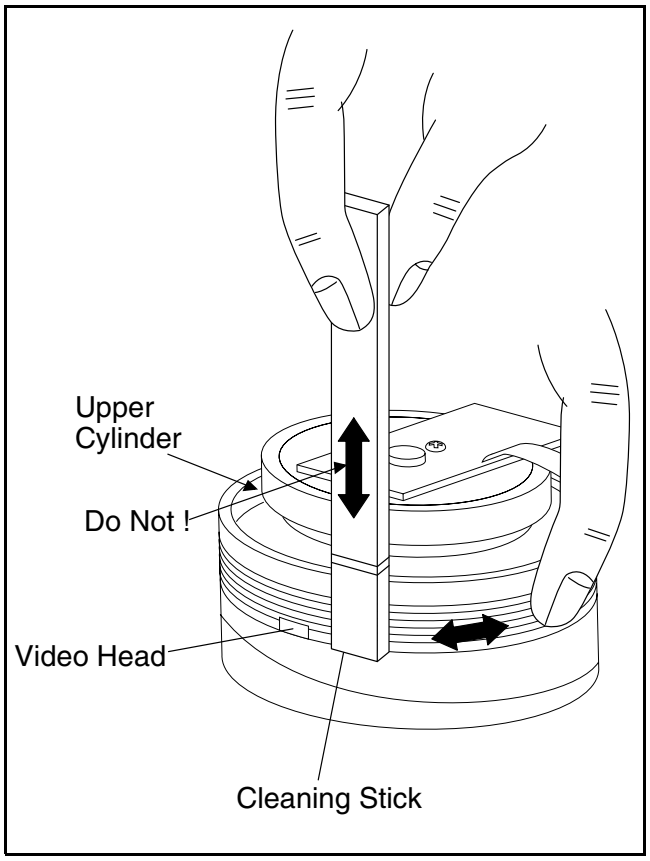
Clean the head with a head cleaning stick or chamois cloth.

Procedure

1. Remove the top cabinet.
2. Put on a glove (thin type) to avoid touching the upper and lower drum with your bare hand.
3. Put a few drops of 90% Isopropyl alcohol on the head cleaning stick or on the chamois cloth and, by slightly pressing it against the head tip, turn the upper drum to the right and to the left.

Notes:

1. The video head surface is made of very hard material, but since it is very thin, avoid cleaning it vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit.
3. Do not reuse a stained head cleaning stick or a stained chamois cloth.



Cleaning of Audio Control Head

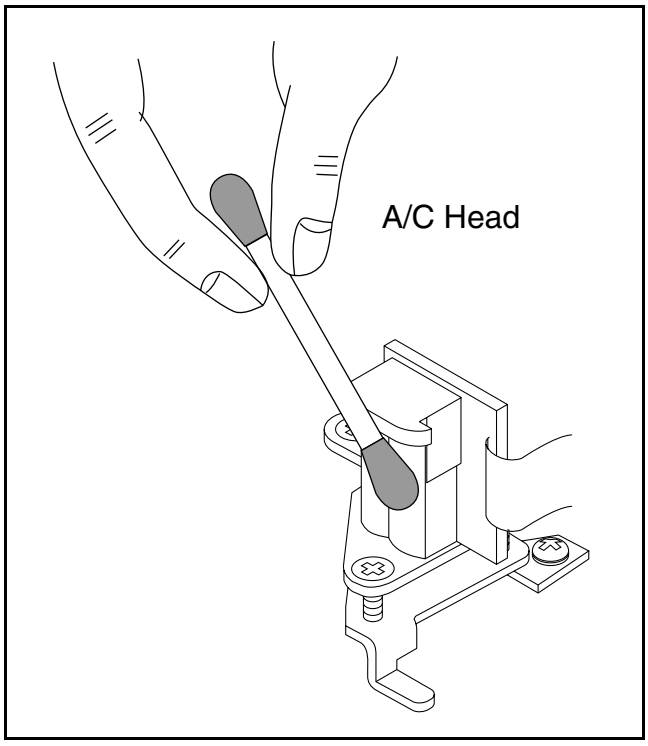
Clean the head with a cotton swab.

Procedure

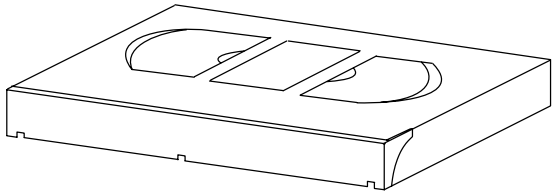
1. Remove the top cabinet.
2. Dip the cotton swab in 90% isopropyl alcohol and clean the audio control head. Be careful not to damage the upper drum and other tape running parts.

Notes:

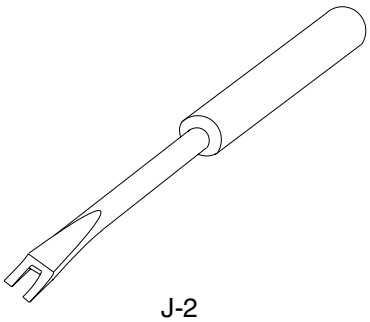
1. Avoid cleaning the audio control head vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit or damage may occur.



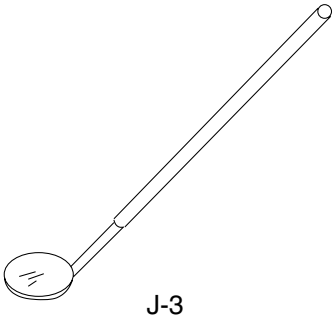
SERVICE FIXTURE AND TOOLS



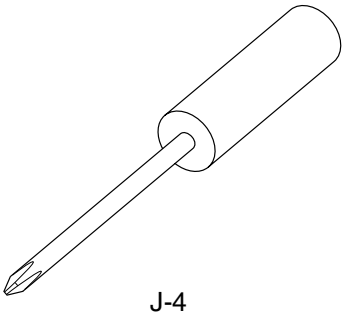
J-1-1, J-1-2



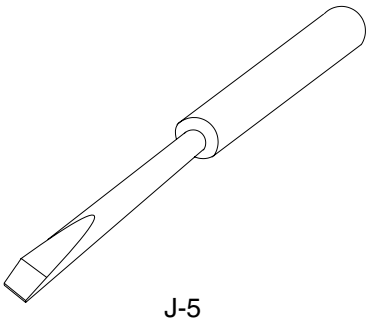
J-2



J-3



J-4



J-5

Ref. No.	Name	Part No.	Adjustment
J-1-1	Alignment Tape	FL8A	Head Adjustment of Audio Control Head
J-1-2	Alignment Tape	FL8N (2Head only) FL8NW (4Head only)	Azimuth and X Value Adjustment of Audio Control Head / Adjustment of Envelope Waveform
J-2	Guide Roller Adj.Screwdriver	Available Locally	Guide Roller
J-3	Mirror	Available Locally	Tape Transportation Check
J-4	Azimuth Adj.Screwdriver +	Available Locally	A/C Head Height
J-5	X Value Adj.Screwdriver -	Available Locally	X Value

MECHANICAL ALIGNMENT PROCEDURES

Explanation of alignment for the tape to correctly run starts on the next page. Refer to the information below on this page if a tape gets stuck, for example, in the mechanism due to some electrical trouble of the unit.

Service Information

A. Method for Manual Tape Loading/Unloading

To load a cassette tape manually:

1. Disconnect the AC plug.
2. Remove the Top Case and Front Assembly.
3. Insert a cassette tape. Though the tape will not be automatically loaded, make sure that the cassette tape is all the way in at the inlet of the Cassette Holder. To confirm this, lightly push the cassette tape further in and see if the tape comes back out, by a spring motion, just as much as you have pushed in.
4. Turn the LDG Belt in the appropriate direction shown in Fig. M1 for a minute or two to complete this task.

To unload a cassette tape manually:

1. Disconnect the AC plug.
2. Remove the Top Case and Front Assembly.
3. Make sure that the Moving guide preparations are in the Eject Position.
4. Turn the LDG Belt in the appropriate direction shown in Fig. M1 until the Moving guide preparations come to the Eject Position. Stop turning when the preparations begin clicking or can not be moved further. However, the tape will be left wound around the cylinder.
5. Turn the LDG Belt in the appropriate direction continuously, and the cassette tape will be ejected. Allow a minute or two to complete this task.

B. Method to place the Cassette Holder in the tape-loaded position without a cassette tape

1. Disconnect the AC Plug.
2. Remove the Top Case and Front Assembly.
3. Turn the LDG Belt in the appropriate direction shown in Fig. M1. Release the locking tabs shown in Fig. M1 and continue turning the LDG Belt until the Cassette Holder comes to the tape-loaded position. Allow a minute or two to complete this task.

Top View

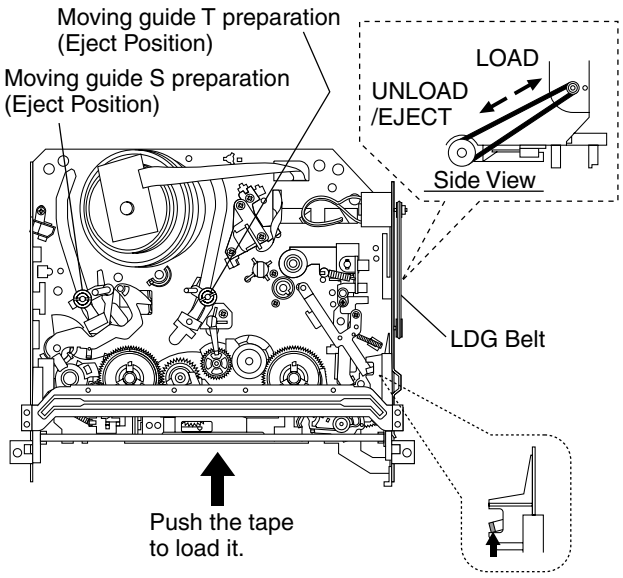


Fig. M1

Bottom View

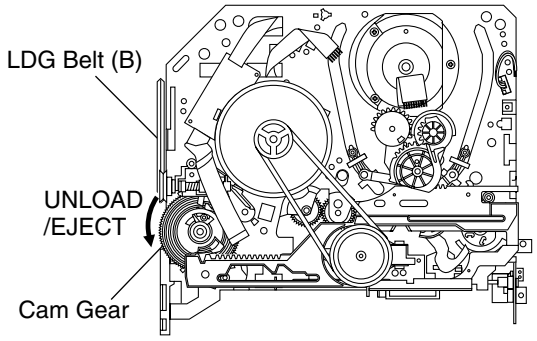


Fig. M2

1.Tape Interchangeability Alignment

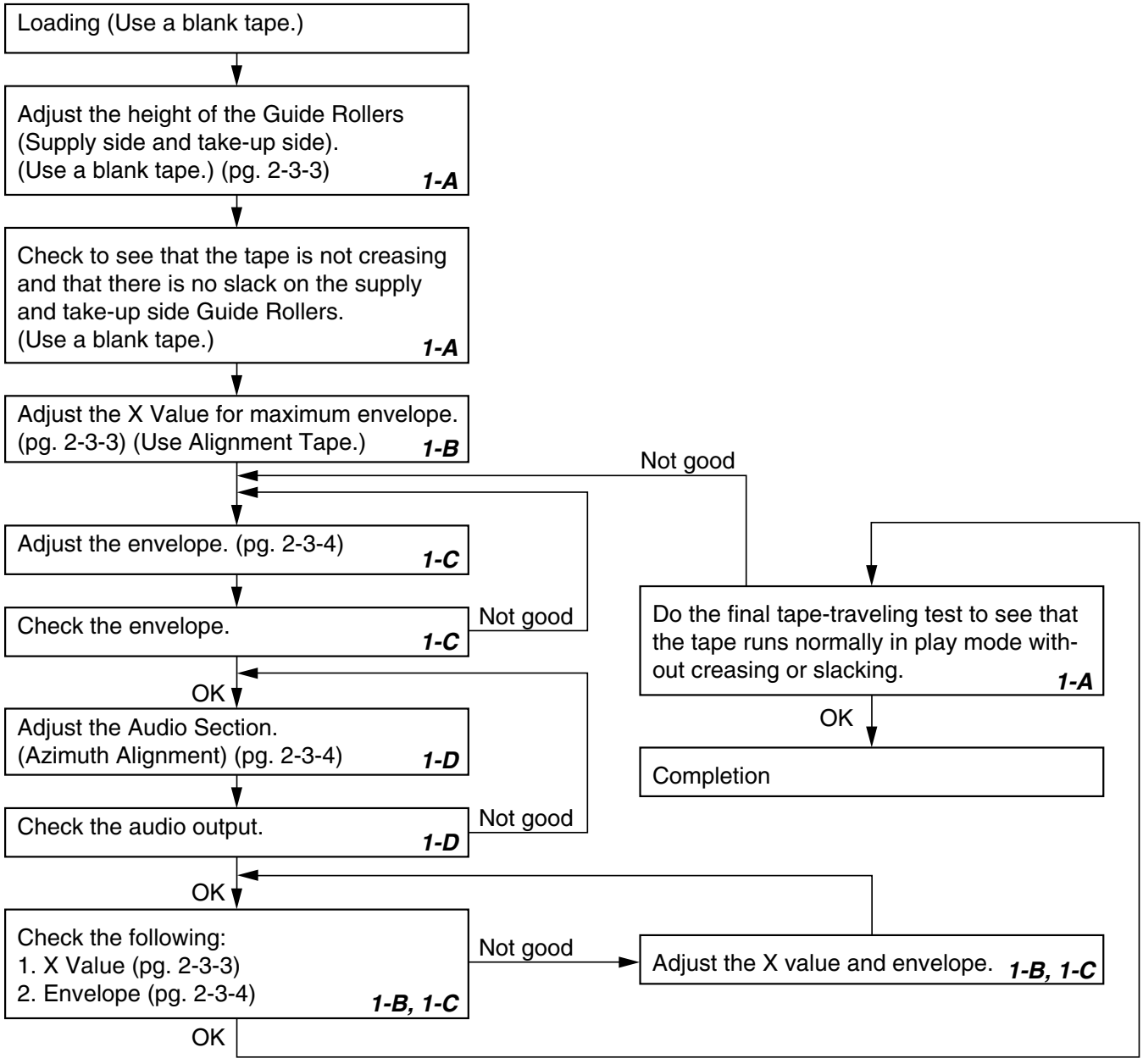
Note:
To do these alignment procedures, make sure that the Tracking Control Circuit is set to the center position every time a tape is loaded or unloaded. (Refer to page 2-3-4, procedure 1-C, step 2.)

Equipment required:

Dual Trace Oscilloscope
VHS Alignment Tape (FL8N)
Guide Roller Adj. Screwdriver
X-Value Adj. Screwdriver

Note: Before starting this Mechanical Alignment, do all Electrical Adjustment procedures.

Flowchart of Alignment for tape traveling


Loading (Use a blank tape.)
Adjust the height of the Guide Rollers (Supply side and take-up side). (Use a blank tape.) (pg. 2-3-3) 1-A
Check to see that the tape is not creasing and that there is no slack on the supply and take-up side Guide Rollers. (Use a blank tape.) 1-A
Adjust the X Value for maximum envelope. (pg. 2-3-3) (Use Alignment Tape.) 1-B
Not good
Adjust the envelope. (pg. 2-3-4) 1-C
Check the envelope. 1-C
Not good
OK
Adjust the Audio Section. (Azimuth Alignment) (pg. 2-3-4) 1-D
Check the audio output. 1-D
Not good
OK
Check the following:
1. X Value (pg. 2-3-3)
2. Envelope (pg. 2-3-4) 1-B, 1-C
Not good
Adjust the X value and envelope. 1-B, 1-C
OK
Do the final tape-traveling test to see that the tape runs normally in play mode without creasing or slacking. 1-A
OK
Completion

1-A. Preliminary/Final Checking and Alignment of Tape Path

Purpose:

To make sure that the tape path is well stabilized.

Symptom of Misalignment:

If the tape path is unstable, the tape will be damaged.

Note: Do not use an Alignment Tape for this procedure. If the unit is not correctly aligned, the tape may be damaged.

1. Play back a blank cassette tape and check to see that the tape runs without creasing at Guide Rollers [2] and [3], and at points A and B on the lead surface. (Refer to Fig M3 and M4.)
2. If creasing is apparent, align the height of the guide rollers by turning the top of Guide Rollers [2] and [3] with a Guide Roller Adj. Screwdriver. (Refer to Fig. M3 and M5.)

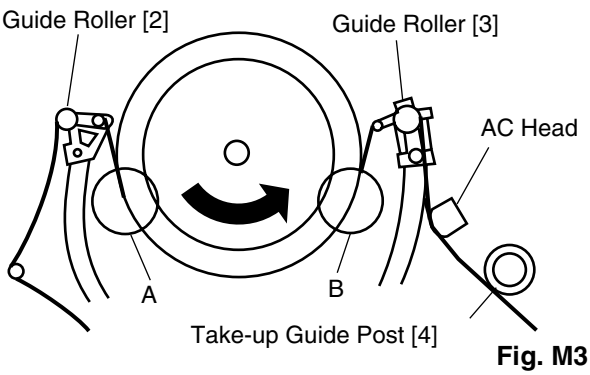


Fig. M3

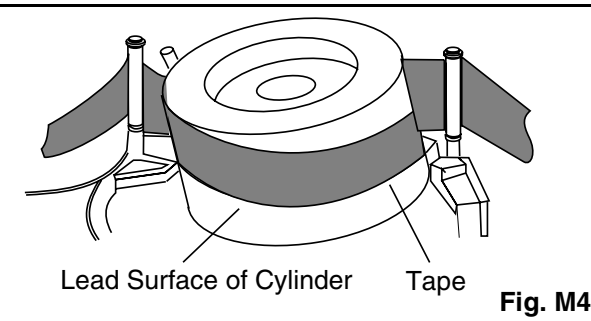


Fig. M4

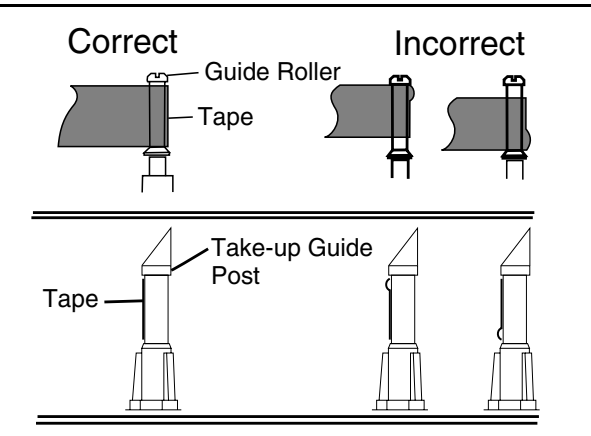


Fig. M5

3. Check to see that the tape runs without creasing at Take-up Guide Post [4] or without snaking between Guide Roller [3] and AC Head. (Fig. M3 and M5)
4. If creasing or snaking is apparent, adjust the Tilt Adj. Screw of the AC Head. (Fig. M6)

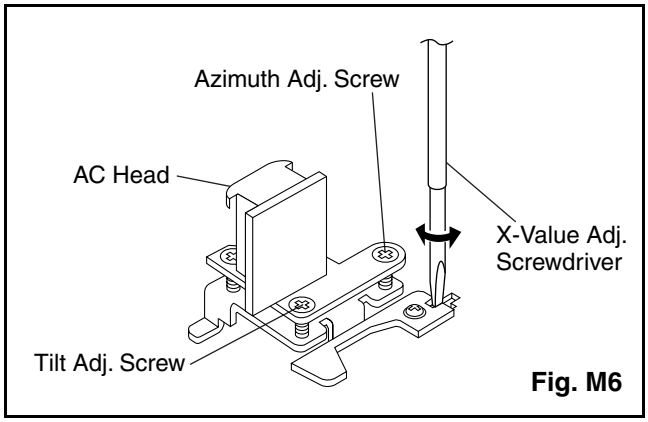


Fig. M6

1-B. X Value Alignment

Purpose:

To align the Horizontal Position of the Audio/Control/Erase Head.

Symptom of Misalignment:

If the Horizontal Position of the Audio/Control/Erase Head is not properly aligned, maximum envelope cannot be obtained at the Neutral position of the Tracking Control Circuit.

1. Connect the oscilloscope to TP403 (ENV) and TP201 (CTL) on the Main CBA. Use TP402 (RF-SW) as a trigger.
2. Play back the Gray Scale of the Alignment Tape (FL8N) and confirm that the PB FM signal is present.
3. Set the Tracking Control Circuit to the center position by pressing CH UP button then " PLAY " button on the unit. (Refer to note on bottom of page 2-3-4.)
4. Use the X-Value Adj. Screwdriver so that the PB FM signal at TP403 (ENV) is maximum. (Fig. M6)
5. Press CH UP button on the unit until the CTL waveform has shifted by approx. +2msec. Make sure that the envelope is simply attenuated (shrinks in height) during this process so that you will know the envelope has been at its peak.

6. Press CH DOWN button on the unit until the CTL waveform has shifted from its original position (not the position achieved in step 5, but the position of CTL waveform in step 4) by approximately -2msec. Make sure that the envelope is simply attenuated (shrinks in height) once CTL waveform passes its original position and is further brought in the minus direction.
7. Set the Tracking Control Circuit to the center position by pressing CH UP button and then " PLAY " button on the unit.

1-C. Checking/Adjustment of Envelope Waveform

Purpose:

To achieve a satisfactory picture and precise tracking.

Symptom of Misalignment:

If the envelope output is poor, noise will appear in the picture. The tracking will then lose precision and the playback picture will be distorted by any slight variation of the Tracking Control Circuit.

1. Connect the oscilloscope to TP403 (ENV) on the Main CBA. Use TP402 (RF-SW) as a trigger.
2. Play back the Gray Scale on the Alignment Tape (FL8N). Set the Tracking Control Circuit to the center position by pressing CH UP button and then " PLAY " button on the unit. Adjust the height of Guide Rollers [2] and [3] (Fig. M3, Page 2-3-3) watching the oscilloscope display so that the envelope becomes as flat as possible. To do this adjustment, turn the top of the Guide Roller with the Guide Roller Adj. Screwdriver.
3. If the envelope is as shown in Fig. M7, adjust the height of Guide Roller [2] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M9.
4. If the envelope is as shown in Fig. M8, adjust the height of Guide Roller [3] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M9.
5. When Guide Rollers [2] and [3] (Refer to Fig.M3) are aligned properly, there is no envelope drop either at the beginning or end of track as shown in Fig. M9.

Note: Upon completion of the adjustment of Guide Rollers [2] and [3] (Refer to Fig. M3), check the X Value by pushing the CH UP or DOWN buttons alternately, to check the symmetry of the envelope. Check the number of pushes to ensure center position. The number of pushes CH UP button to achieve 1/2 level of envelope should match the number of pushes CH DOWN button from center. If required, redo the "X Value Alignment."

1-D. Azimuth Alignment of Audio/Control/ Erase Head

Purpose:

To correct the Azimuth alignment so that the Audio/ Control/Erase Head meets tape tracks properly.

Symptom of Misalignment:

If the position of the Audio/Control/Erase Head is not properly aligned, the Audio S/N Ratio or Frequency Response will be poor.

1. Connect the oscilloscope to the audio output jack on the rear side of the deck.
2. Play back the alignment tape (FL8N) and confirm that the audio signal output level is 8kHz.
3. Adjust Azimuth Adj. Screw so that the output level on the AC Voltmeter or the waveform on the oscilloscope is at maximum. (Fig. M6)

Dropping envelope level at the beginning of track.

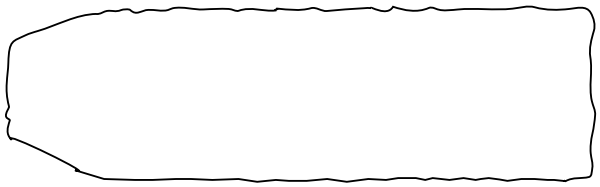


Fig. M7

Dropping envelope level at the end of track.

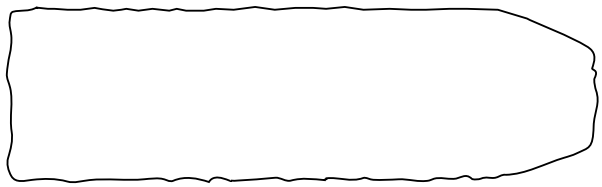


Fig. M8

Envelope is adjusted properly. (No envelope drop)

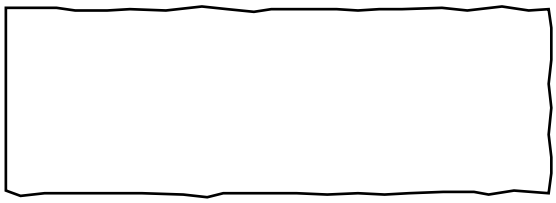


Fig. M9

DISASSEMBLY/ASSEMBLY PROCEDURES OF DECK MECHANISM

Before following the procedures described below, be sure to remove the deck assembly from the cabinet. (Refer to CABINET DISASSEMBLY INSTRUCTIONS on page 1-6-1.)
All the following procedures, including those for adjustment and replacement of parts, should be done in Eject mode; see the positions of [41] and [42] in Fig.DM1 on page 2-4-3. When reassembling, follow the steps in reverse order.

STEP /LOC. No.	START-ING No.	PART		REMOVAL		INSTALLATION
				Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	ADJUSTMENT CONDITION
[1]	[1]	Guide Holder A	T	DM3	2(S-1)	
[2]	[1]	Cassette Holder Assembly	T	DM4		
[3]	[2]	Slider L	T	DM5	(S-2)	
[4]	[2]	Slider R	T	DM5	(S-3)	
[5]	[4]	Lock Lever	T	DM5	(S-4),*(P-1)	
[6]	[2]	C Plate	T	DM5		
[7]	[7]	Cylinder Assembly	T	DM1,DM6	Desolder, 3(S-5)	
[8]	[8]	Loading Motor Assembly	T	DM1,DM7	Desolder, LDG Belt, 2(S-6)	
[9]	[9]	AC Head Assembly	T	DM1,DM7	(S-7)	
[10]	[2]	Tape Guide Assembly	T	DM1,DM8	*(P-2)	
[11]	[10]	Door Opener B	T	DM1,DM8	*(L-1),*(L-2)	
[12]	[11]	Pinch Arm (B)	T	DM1,DM8	*(P-3)	
[13]	[12]	Pinch Arm (A) Assembly	T	DM1,DM8		
[14]	[14]	FE Head	T	DM1,DM9	(S-8)	
[15]	[15]	Prism	T	DM1,DM9	(S-9)	
[16]	[2]	Slider Shaft	T	DM10	(S-10),*(L-3)	
[17]	[16]	C Drive Lever L	T	DM10		
[18]	[16]	C Drive Lever R	T	DM10		
[19]	[7],[10]	Capstan Motor	B	DM2,DM11	3(S-11), Cap Belt	
[20]	[20]	Clutch Assembly	B	DM2,DM12	(C-1)	
[21]	[20]	FF Arm	B	DM2,DM12		
[22]	[22]	Cam Holder F	B	DM2,DM13	(C-2)	
[23]	[23]	Cam Gear (B)	B	DM2,DM13	(C-3),*(P-4)	
[24]	[24]	Mode Gear	B	DM2,DM14	(C-4)	
[25]	[20],[23], [24]	Mode Lever	B	DM2,DM14	(C-5), *(L-4)	
[26]	[22]	Worm Holder	B	DM2,DM14	(S-12)	
[27]	[26]	Pulley Assembly	B	DM2,DM14		
[28]	[25],[26]	Cam Gear (A)	B	DM2,DM14		
[29]	[25]	Idler Assembly	B	DM1,DM15	*(L-5)	
[30]	[25]	BT Arm	B	DM2,DM15	*(P-5)	
[31]	[25]	Loading Arm S (B) Assembly	B	DM2,DM15		(+)Refer to Alignment Sec.Pg.2-4-9
[32]	[31]	Loading Arm T (B) Assembly	B	DM2,DM15		(+)Refer to Alignment Sec.Pg.2-4-9

STEP /LOC. No.	START-ING No.	PART		REMOVAL		INSTALLATION
				Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	ADJUSTMENT CONDITION
[33]	[2],[25]	M Brake T Assembly	T	DM1,DM16	*(P-6)	
[34]	[2],[25]	M Brake S Assembly	T	DM1,DM16	*(P-7)	
[35]	[34]	Tension Lever Sub Assembly	T	DM1,DM16		
[36]	[35]	T Lever Holder	T	DM1,DM16	*(L-6)	
[37]	[33]	M Gear	T	DM1,DM16	(C-6)	
[38]	[2],[15]	Sensor Gear	T	DM1,DM16	(C-7)	
[39]	[33]	Reel T	T	DM1,DM16		
[40]	[35]	Reel S	T	DM1,DM16		
[41]	[31],[35]	Moving Guide S Preparation	T	DM1,DM17		
[42]	[32]	Moving Guide T Preparation	T	DM1,DM17		
[43]	[19]	TG Post Assembly	T	DM1,DM17	*(L-7)	
[44]	[19],[28]	Rack Assembly	R	DM18		(+)Refer to Alignment Sec.Pg.2-4-10
[45]	[44]	F Door Opener	R	DM18	*(P-8)	
[46]	[46]	Cleaner Lever Assembly	T	DM1,DM6	*(L-8)	
↓ (1)	↓ (2)	↓ (3)	↓ (4)	↓ (5)	↓ (6)	↓ (7)

(1): Follow steps in sequence. When reassembling, follow the steps in reverse order.
These numbers are also used as identification (location) No. of parts in the figures.

(2): Indicates the part to start disassembling with in order to disassemble the part in column (1).

(3): Name of the part

(4): Location of the part: T=Top B=Bottom R=Right L=Left

(5): Figure Number

(6): Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
P=Spring, W=Washer, C=Cut Washer, S=Screw, *=Unhook, Unlock, Release, Unplug, or Desolder
e.g., 2(L-2) = two Locking Tabs (L-2).

(7): Adjustment Information for Installation
(+):Refer to Deck Exploded Views for lubrication.

.

Top View

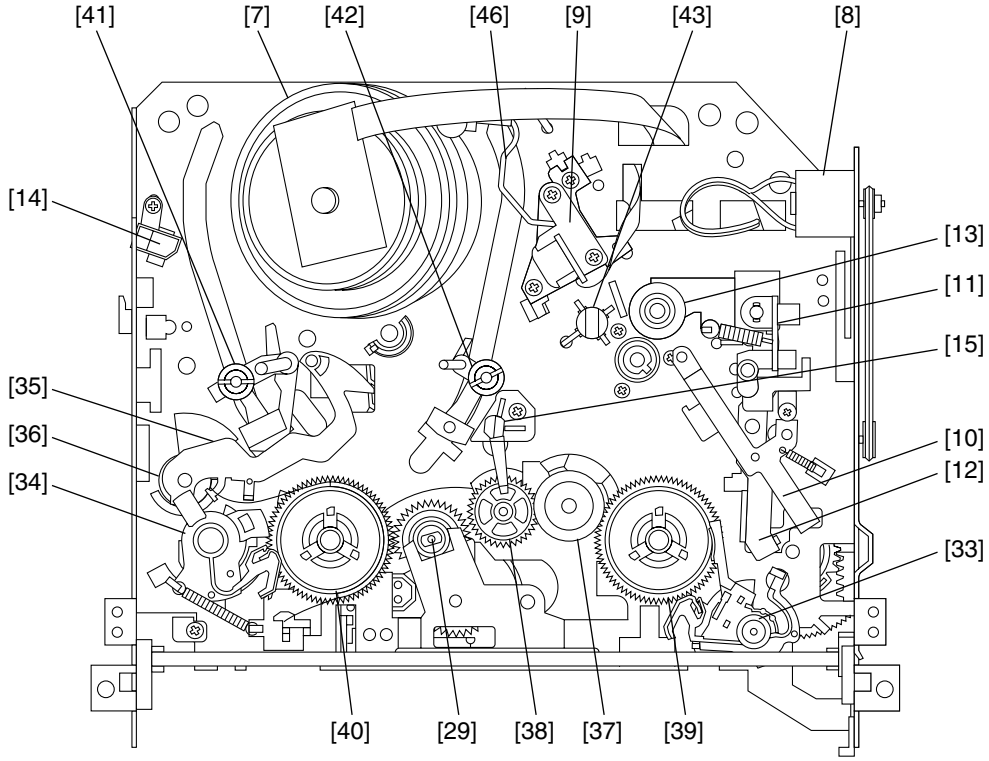


Fig. DM1

Bottom View

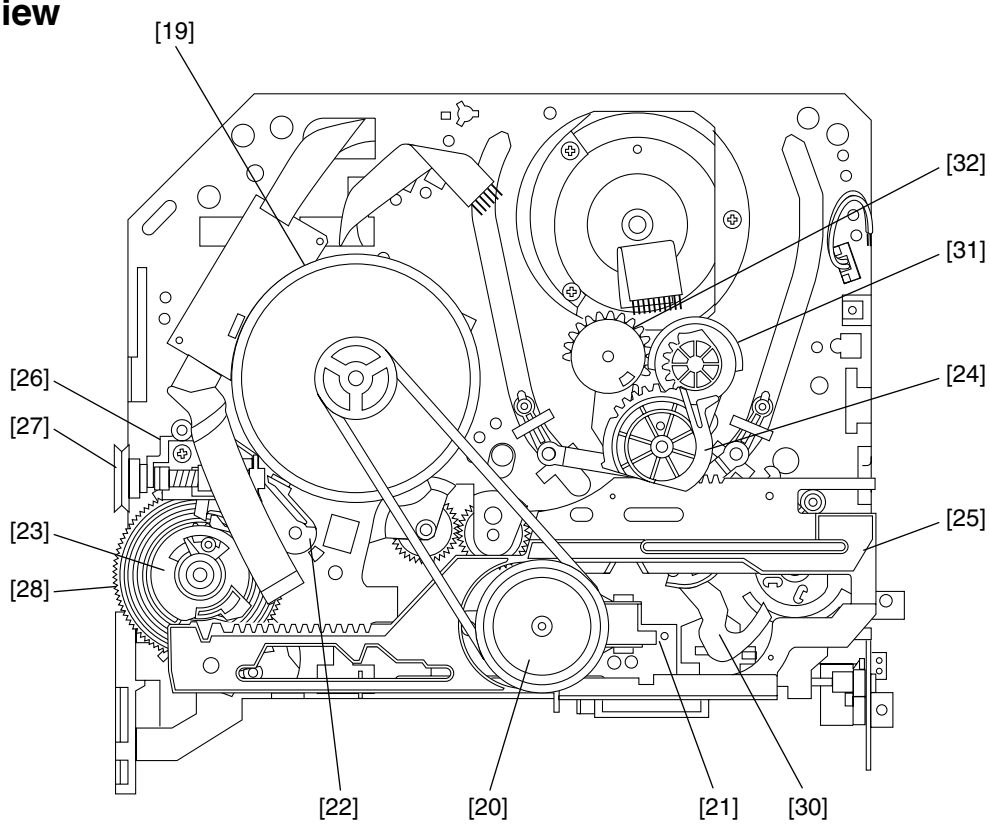


Fig. DM2

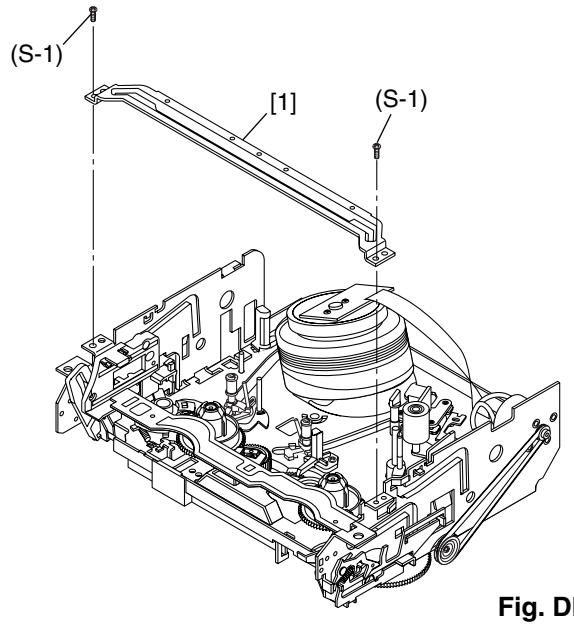


Fig. DM3

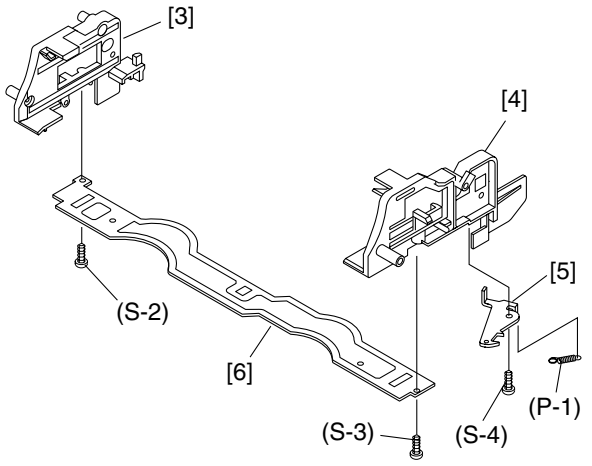
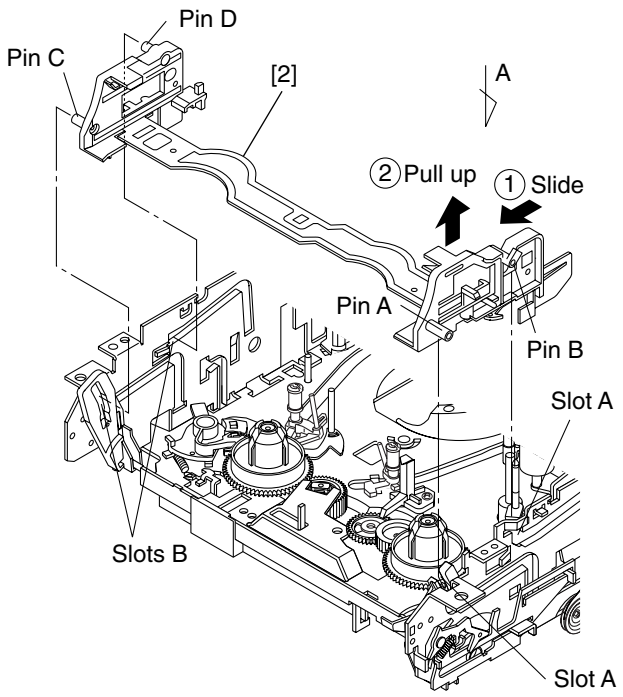


Fig. DM5



First, while pushing the locking tab as shown in the right, slide and pull up the right side on [2] to release Pin A and Pin B from the slots A.
Then, remove Pin C and Pin D on [2] from the slots B as shown.

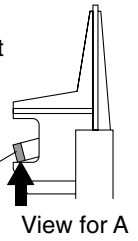
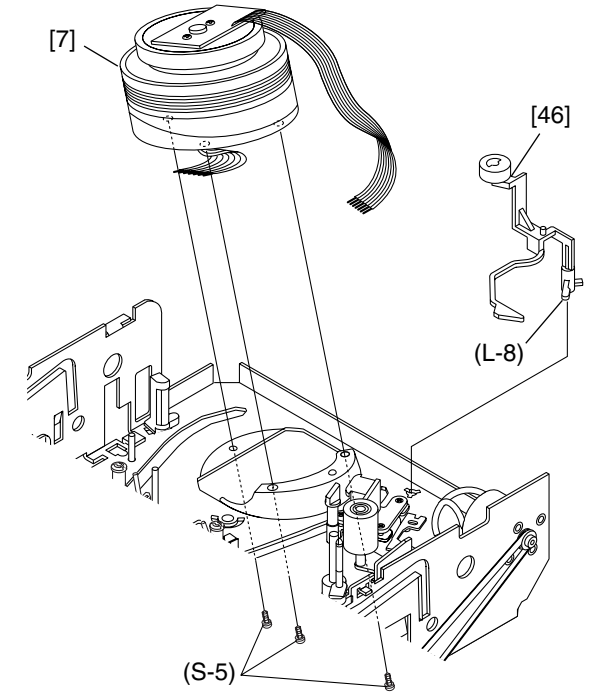


Fig. DM4



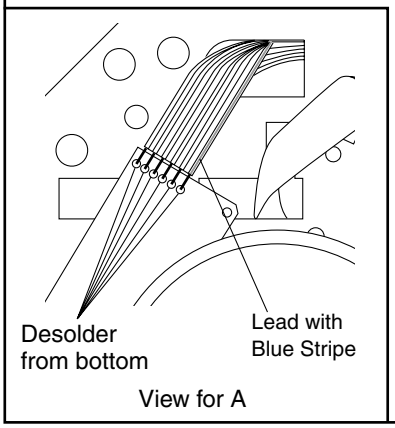


Fig. DM6

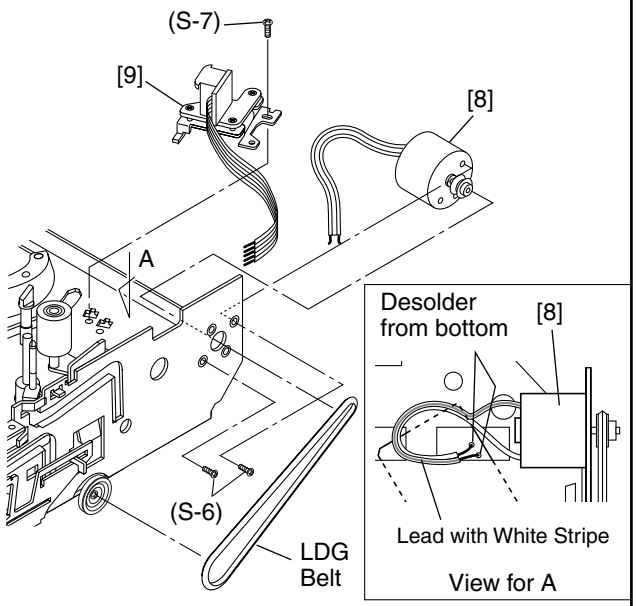


Fig. DM7

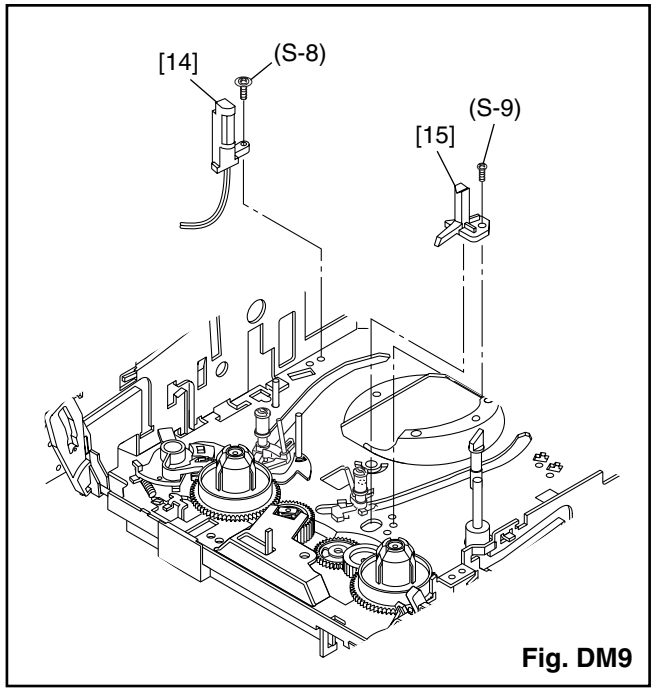
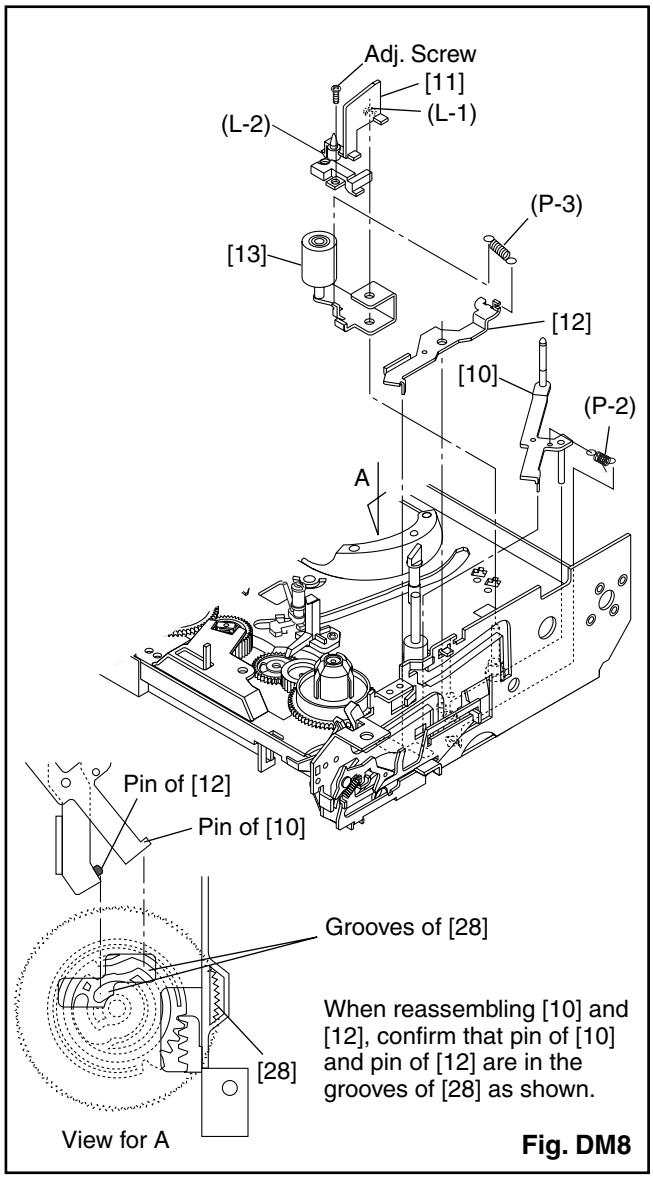


Fig. DM9



When reassembling [10] and [12], confirm that pin of [10] and pin of [12] are in the grooves of [28] as shown.

Fig. DM8

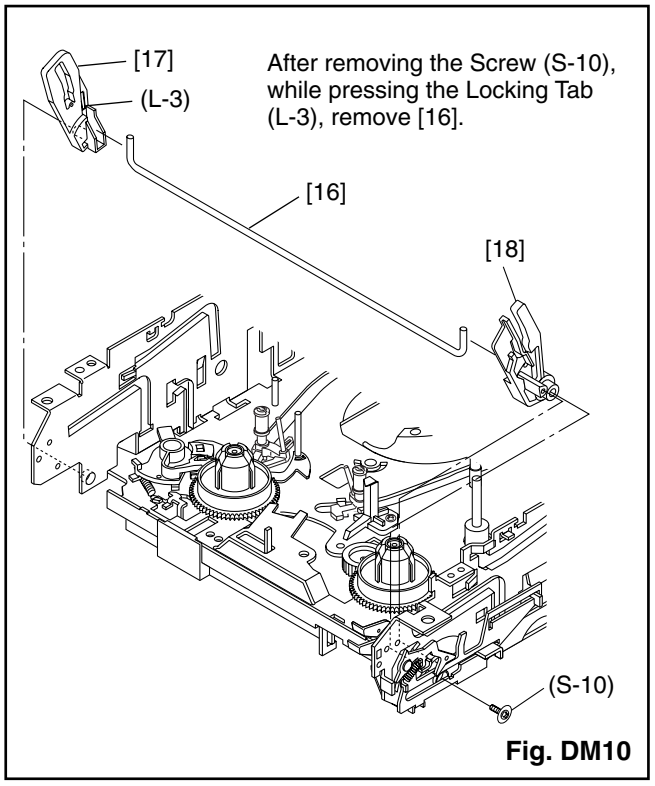


Fig. DM10

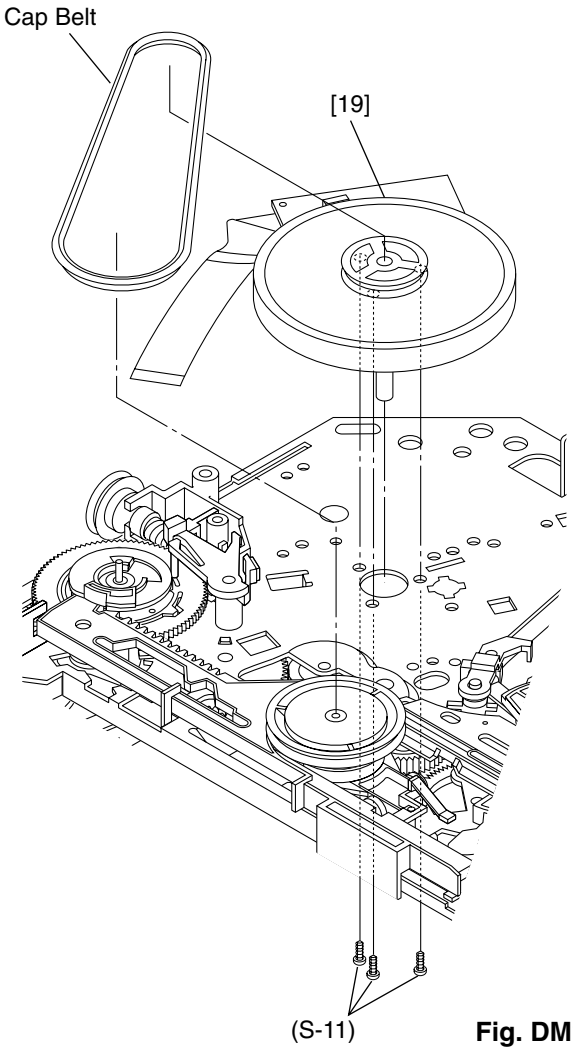


Fig. DM11

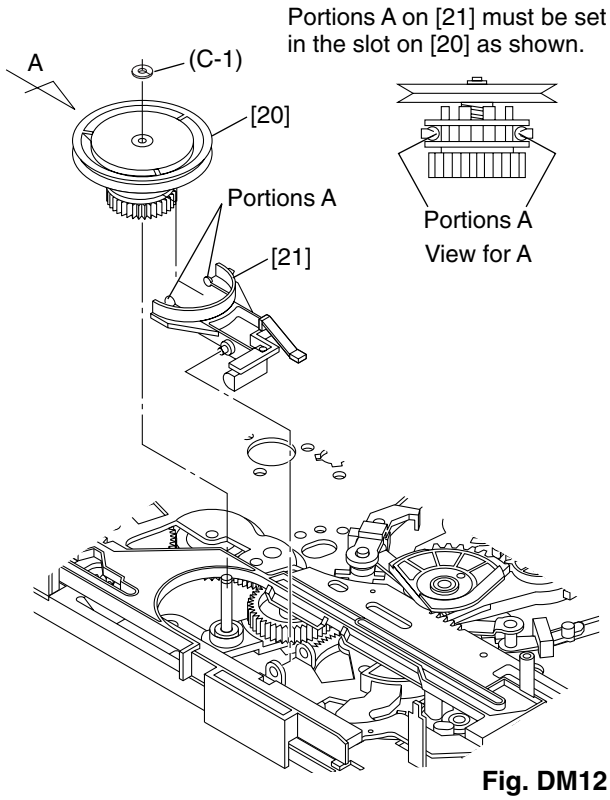
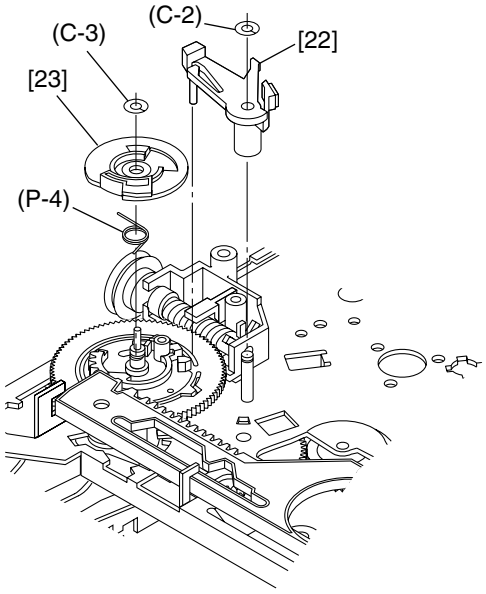
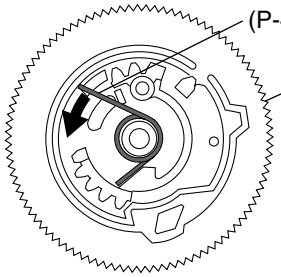


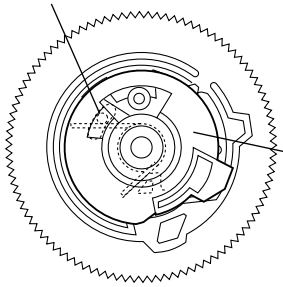
Fig. DM12



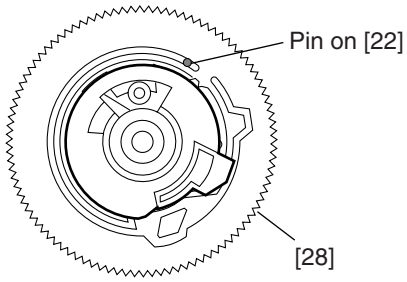


When installing [23], install the spring (P-4) to [28] as shown in the left figure, and then install [23] while pressing the spring (P-4) to the direction of the arrow in the left figure and confirming that the position of the spring (P-4) is placed as shown in the left figure.

Pin on bottom of [23]

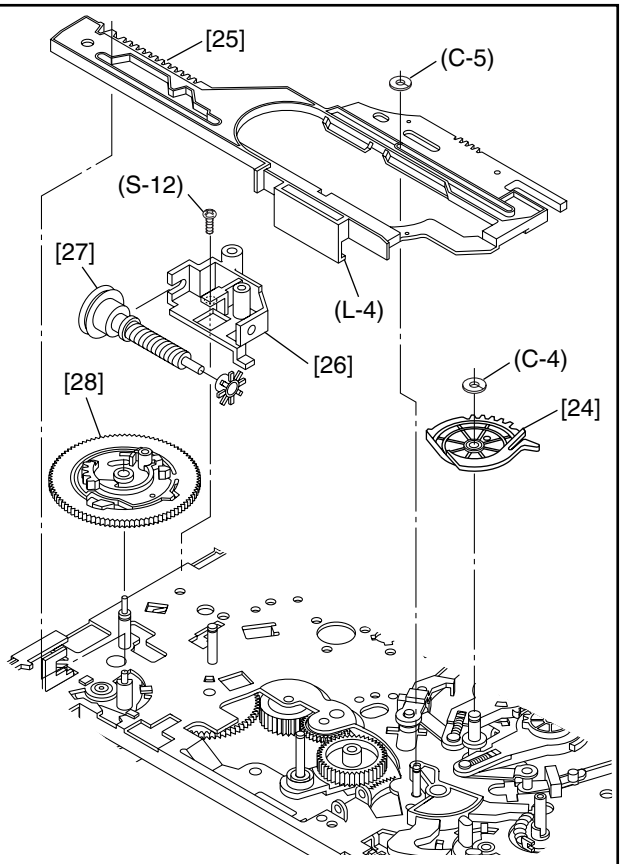


Top View

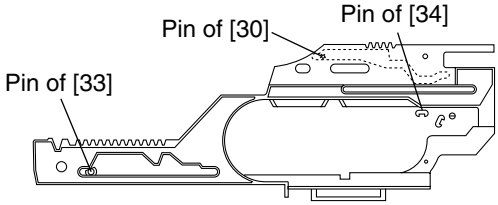


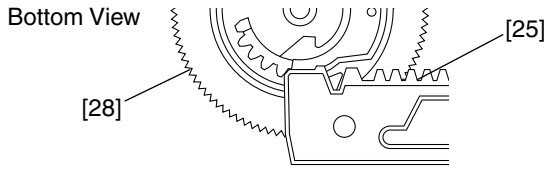
Position of pin on [22]

Fig. DM13

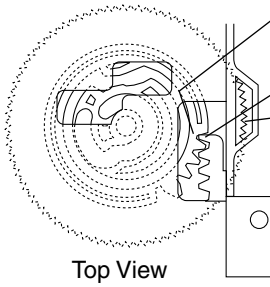


Position of Mode Lever when installed





Align [25] and [28] as shown.



When reassembling [28], meet the first groove on [28] to the first tooth on [44] as shown.

Top View

Fig. DM14

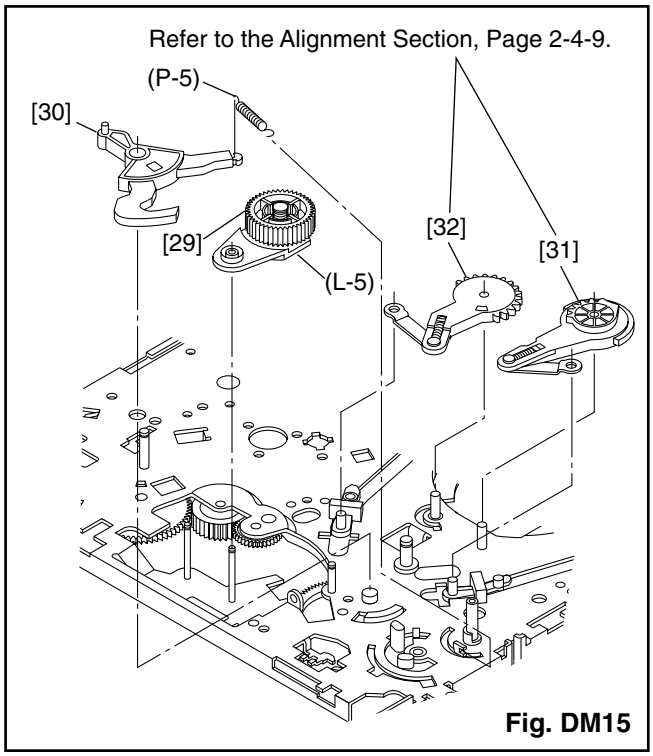


Fig. DM15

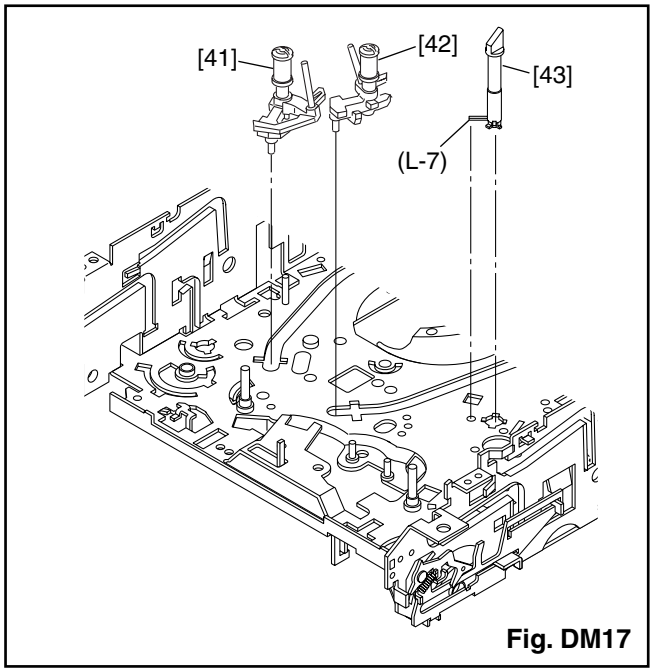


Fig. DM17

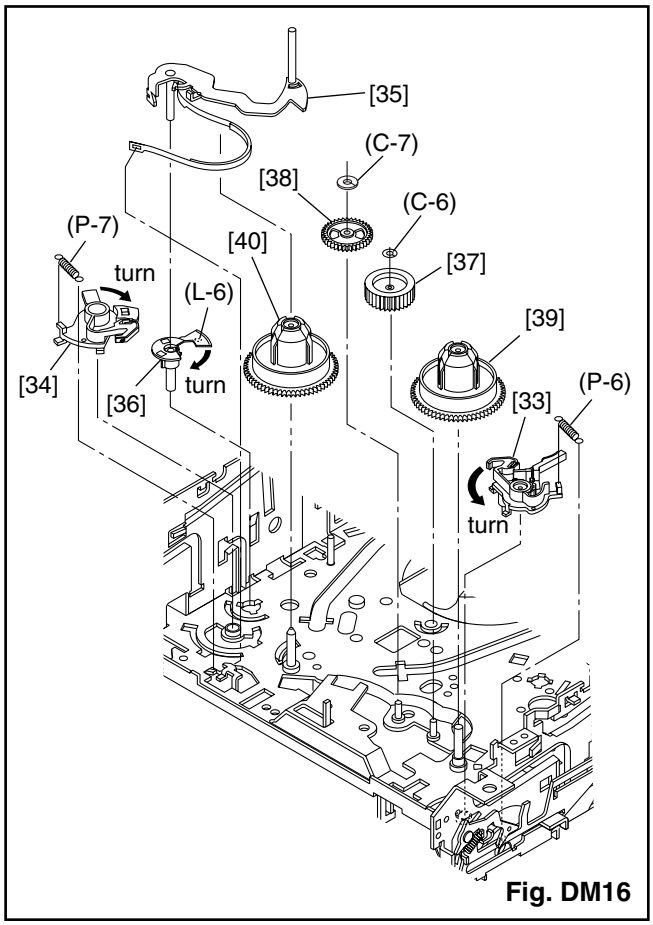


Fig. DM16

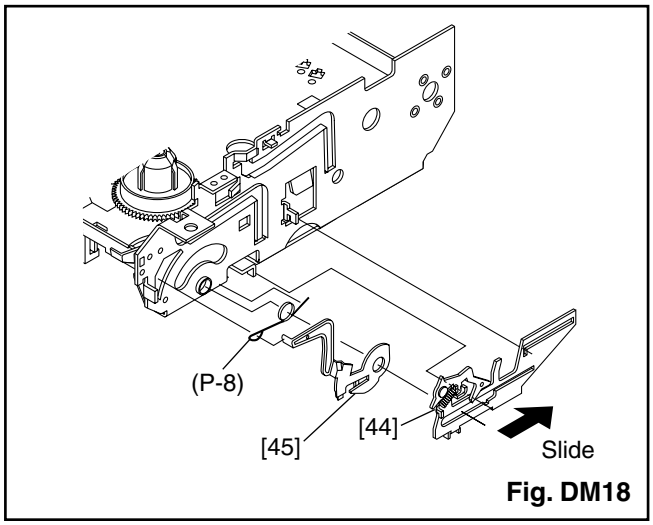


Fig. DM18

ALIGNMENT PROCEDURES OF MECHANISM

The following procedures describe how to align the individual gears and levers that make up the tape loading/unloading mechanism. Since information about the state of the mechanism is provided to the System Control Circuit only through the Mode Switch, it is essential that the correct relationship between individual gears and levers be maintained.

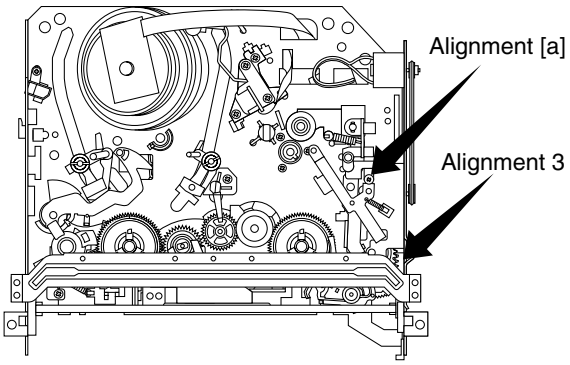
All alignments are to be performed with the mechanism in Eject mode, in the sequence given. Each procedure assumes that all previous procedures have been completed.

IMPORTANT:

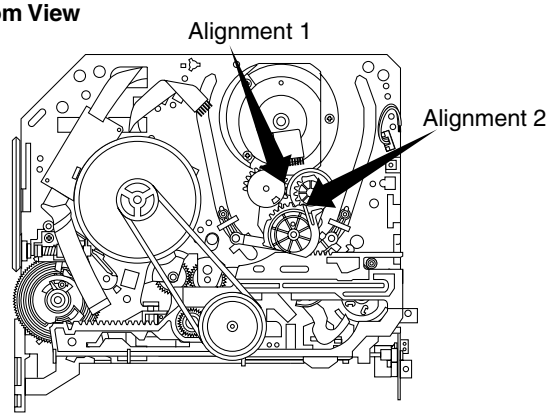
If any one of these alignments is not performed properly, even if off by only one tooth, the unit will unload or stop and it may result in damage to the mechanical or electrical parts.

Alignment points in Eject Position

Top View



Bottom View



Alignment [a] can be done independently of any other alignment.

Fig. AL1

Alignment 1

Loading Arm, S and T Assembly

Install Loading Arm S and T Assembly so that their triangle marks point to each other as shown in Fig. AL2.

Alignment 2

Mode Gear

Keeping the two triangles pointing at each other, install the Loading Arm T Assembly so that the last tooth of the gear meets the most inside teeth of the Mode Gear. See Fig. AL2.

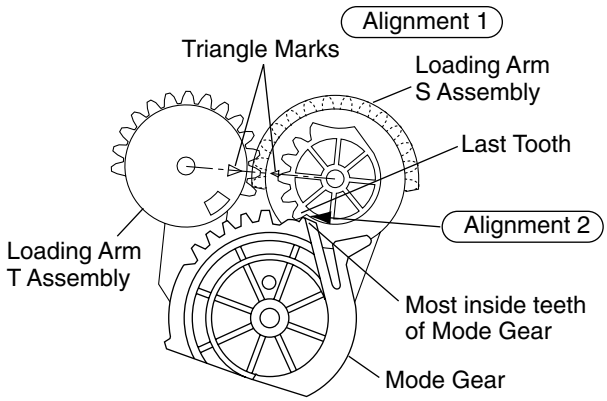


Fig. AL2

Alignment [a]

Tape Guide Assembly

Measurement of the screw must be as specified in Fig. AL3.

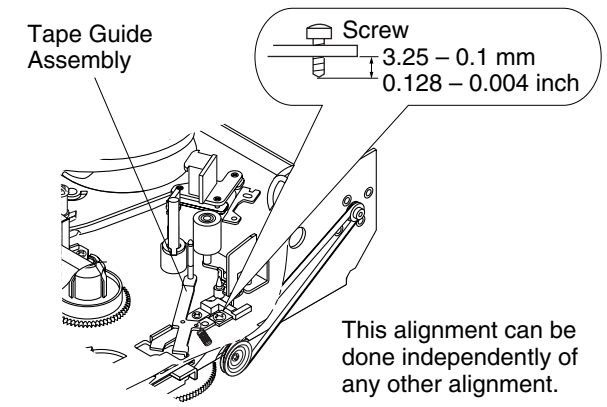


Fig. AL3

Alignment 3

Cam Gear (A), Rack Assembly

Install the Rack Assembly so that the first tooth on the gear of the Rack Assembly meets the first groove on the Cam Gear (A) as shown in Fig. AL4.

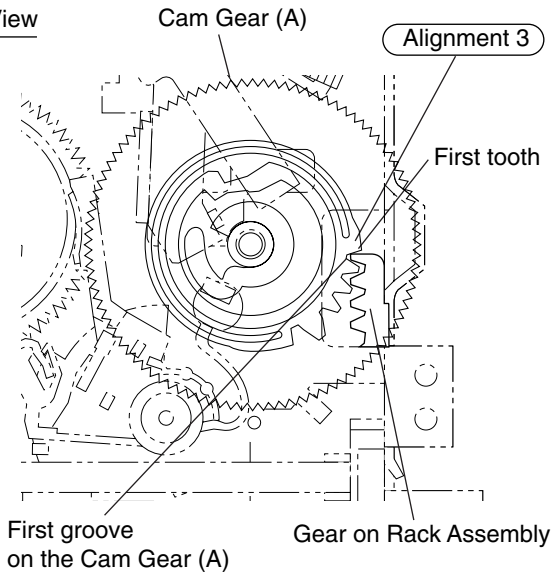


Fig. AL4

EXPLODED VIEWS AND PARTS LIST SECTION

9" COLOR TV/VCR COMBINATION

SC309C/F3809U/6309CC /EWC0902/SSC092

Sec. 3: Exploded views and Parts List Section
- **Exploded views**
- **Parts List**

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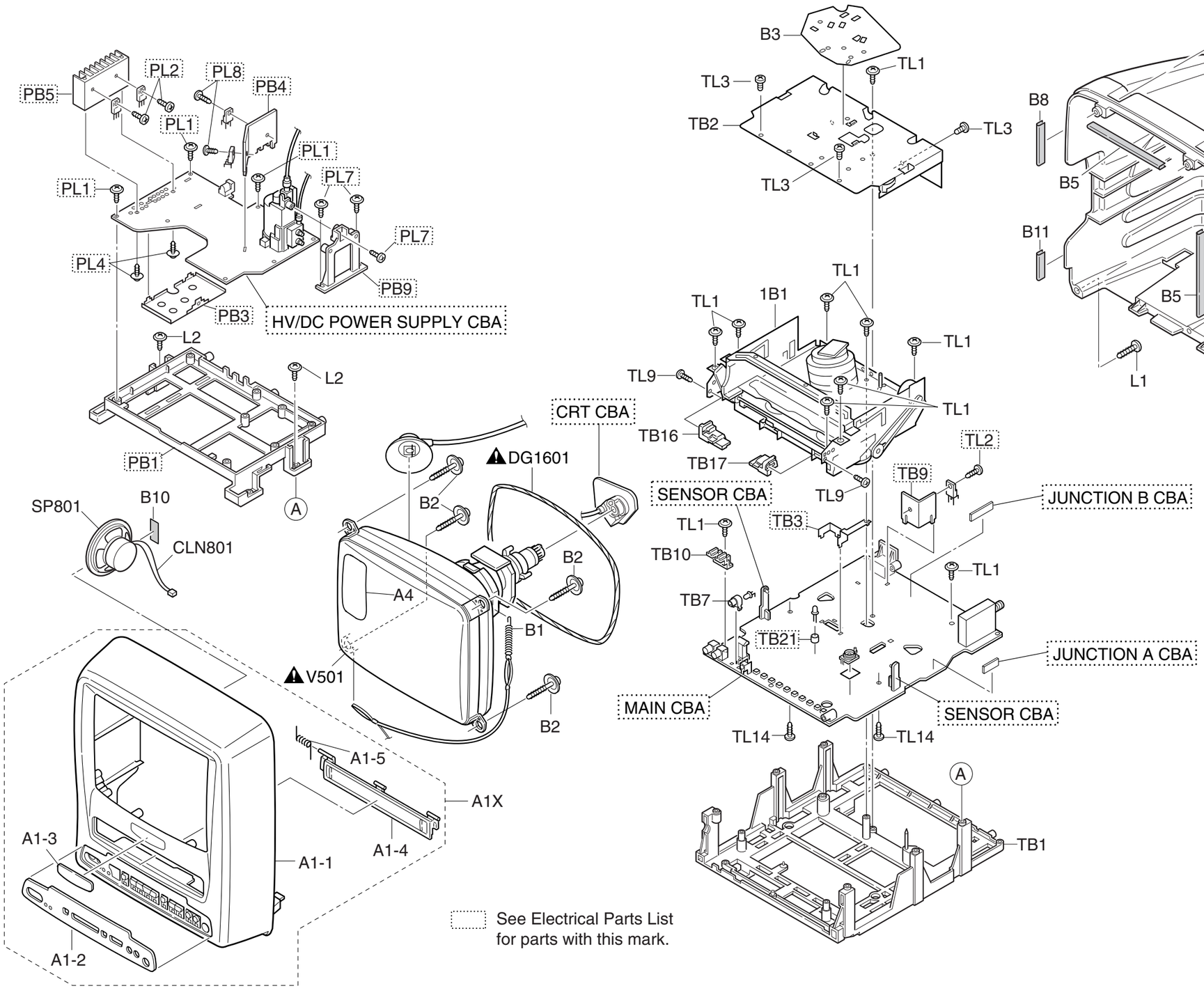
Cabinet Exploded Views 3-1-1
Packing Exploded Views 3-1-7
Deck Exploded Views 3-1-8
Mechanical Parts List 3-2-1
Electrical Parts List 3-3-1
Deck Parts List 3-4-1

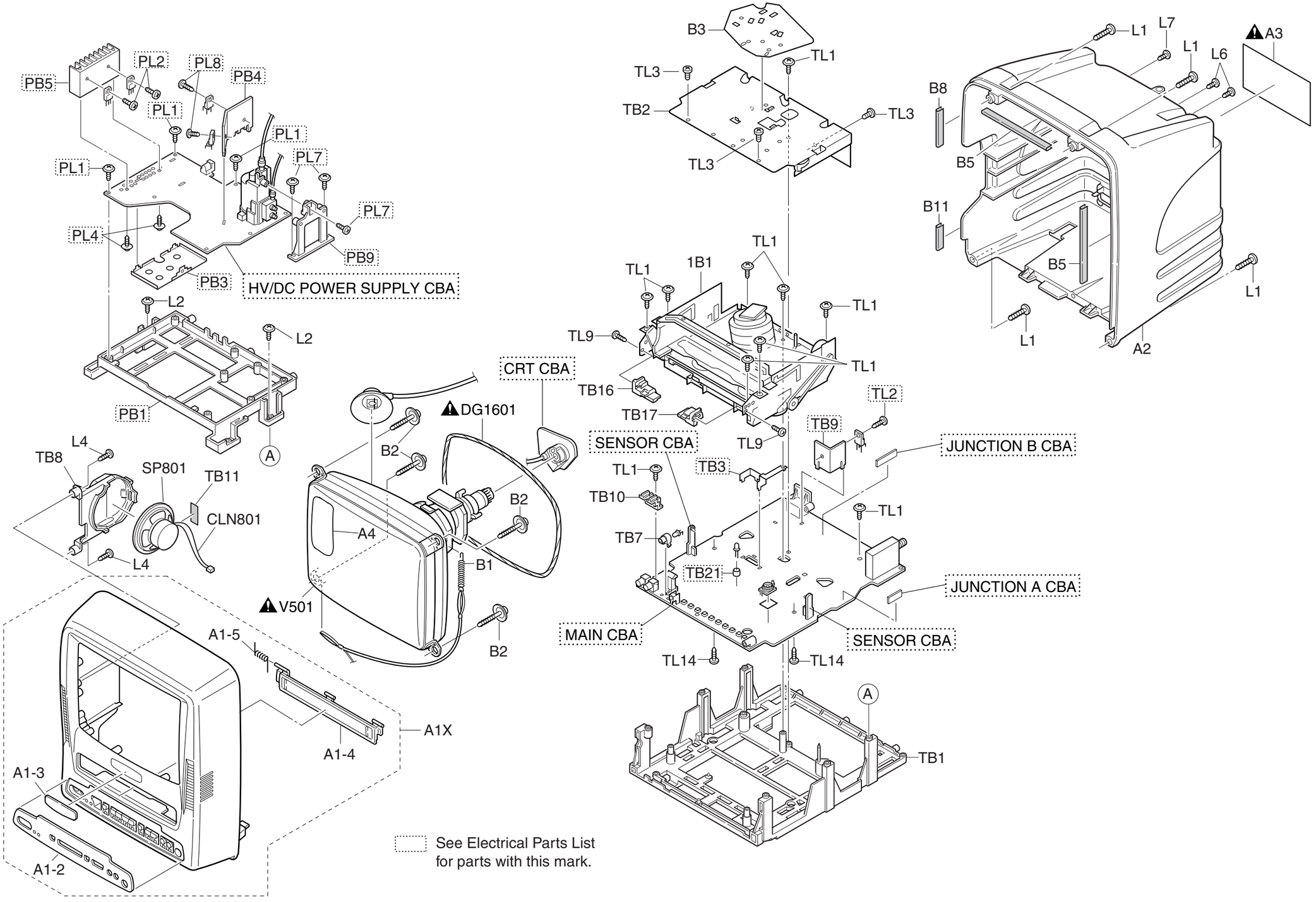
EXPLODED VIEWS

Cabinet [SC309C/F3809U/6309CC]

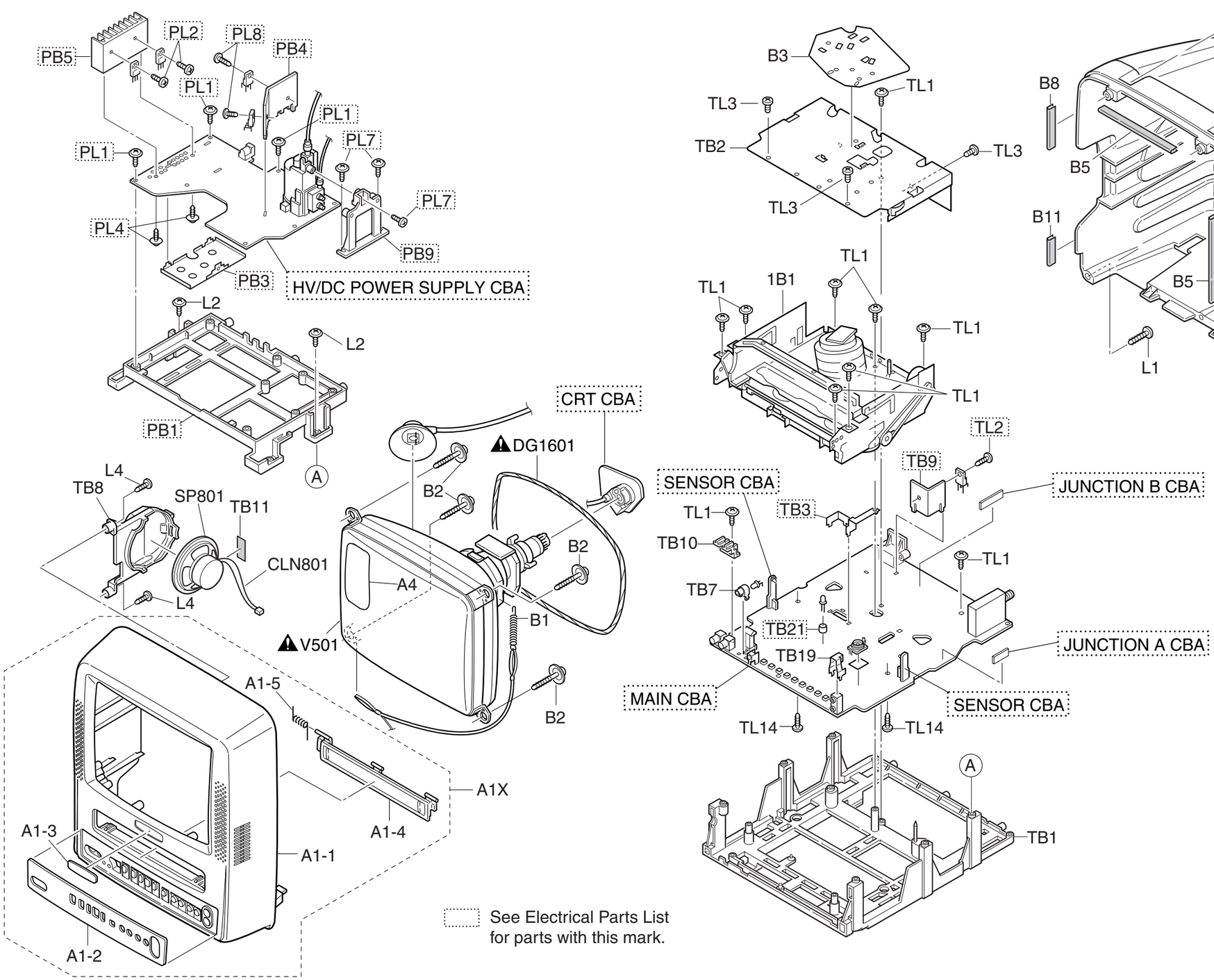


See Electrical Parts List for parts with this mark.

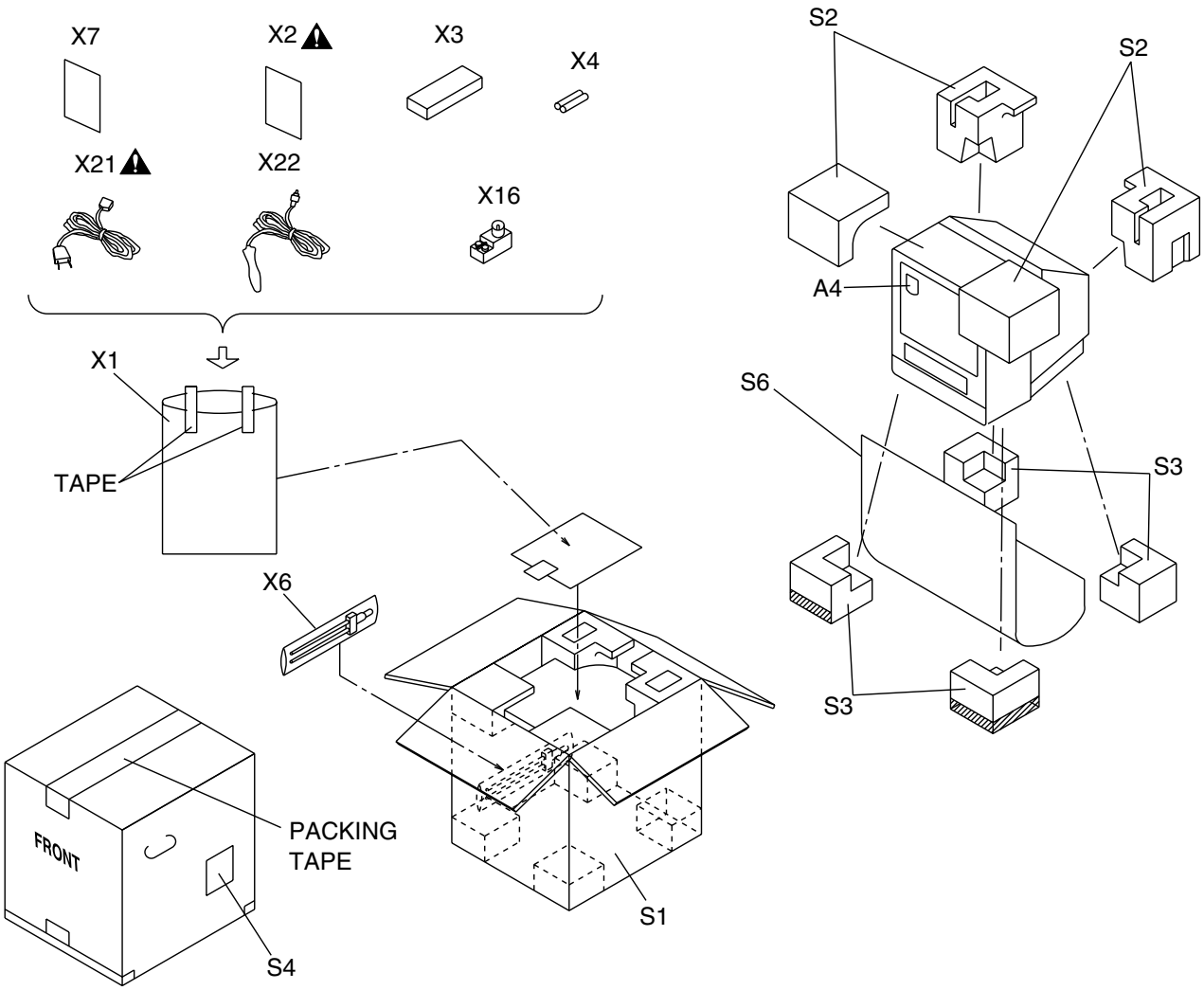
Cabinet [EWC0902]



Cabinet [SSC092]



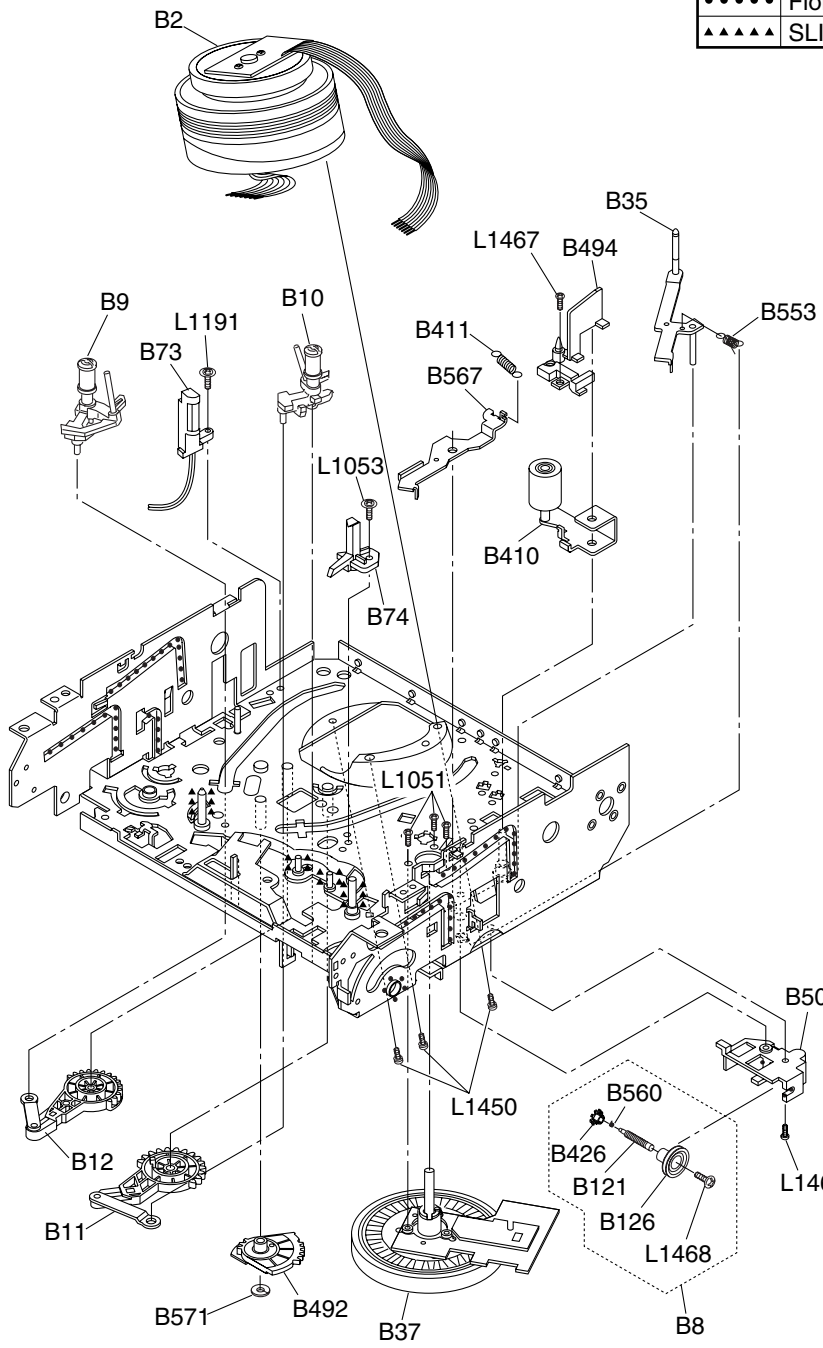
Packing

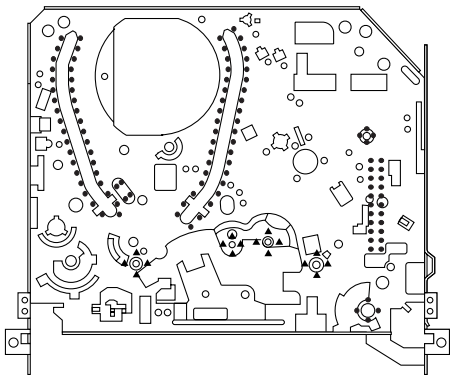

X7
X2
X3
X4
X21
X22
X16
X1
TAPE
X6
S2
S2
A4
S6
S3
S3
PACKING
TAPE
FRONT
S4
S1

DECK EXPLODED VIEWS

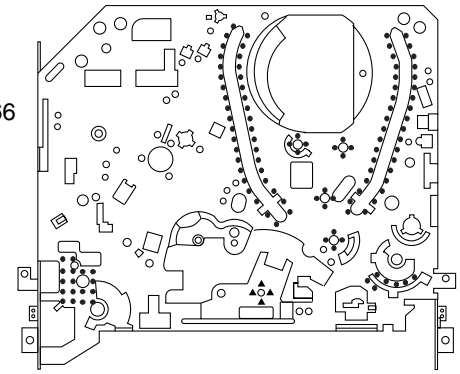
Deck Mechanism View 1

Mark	Description	Part No.
●●●●●	Floil G-374G (Blue grease)	0VZZ00109
▲▲▲▲▲	SLIDUS OIL #150	0VZZ00226





Chassis Assembly
Top View (Lubricating Point)

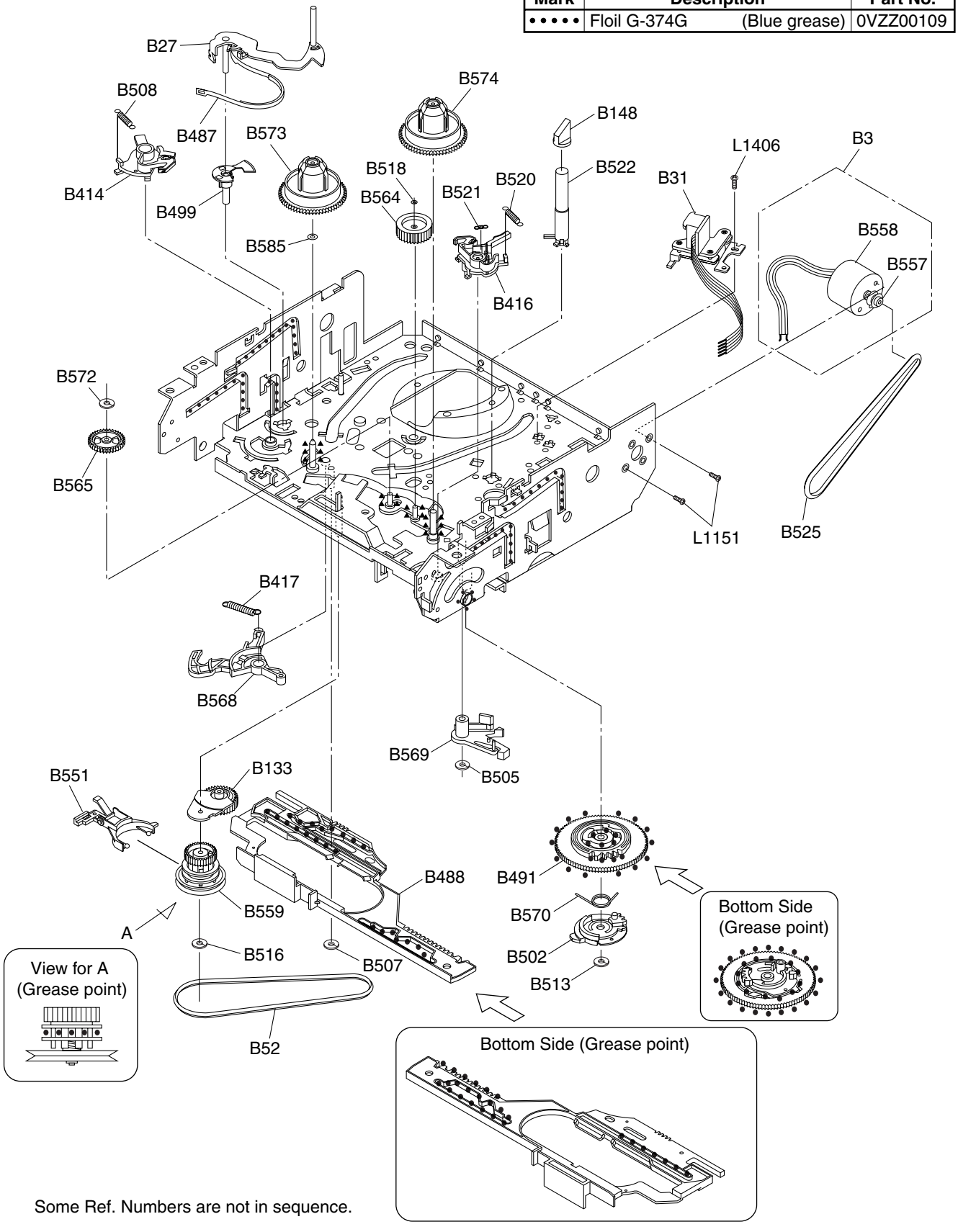


Chassis Assembly
Bottom View (Lubricating Point)

Some Ref. Numbers are not in sequence.

Deck Mechanism View 2

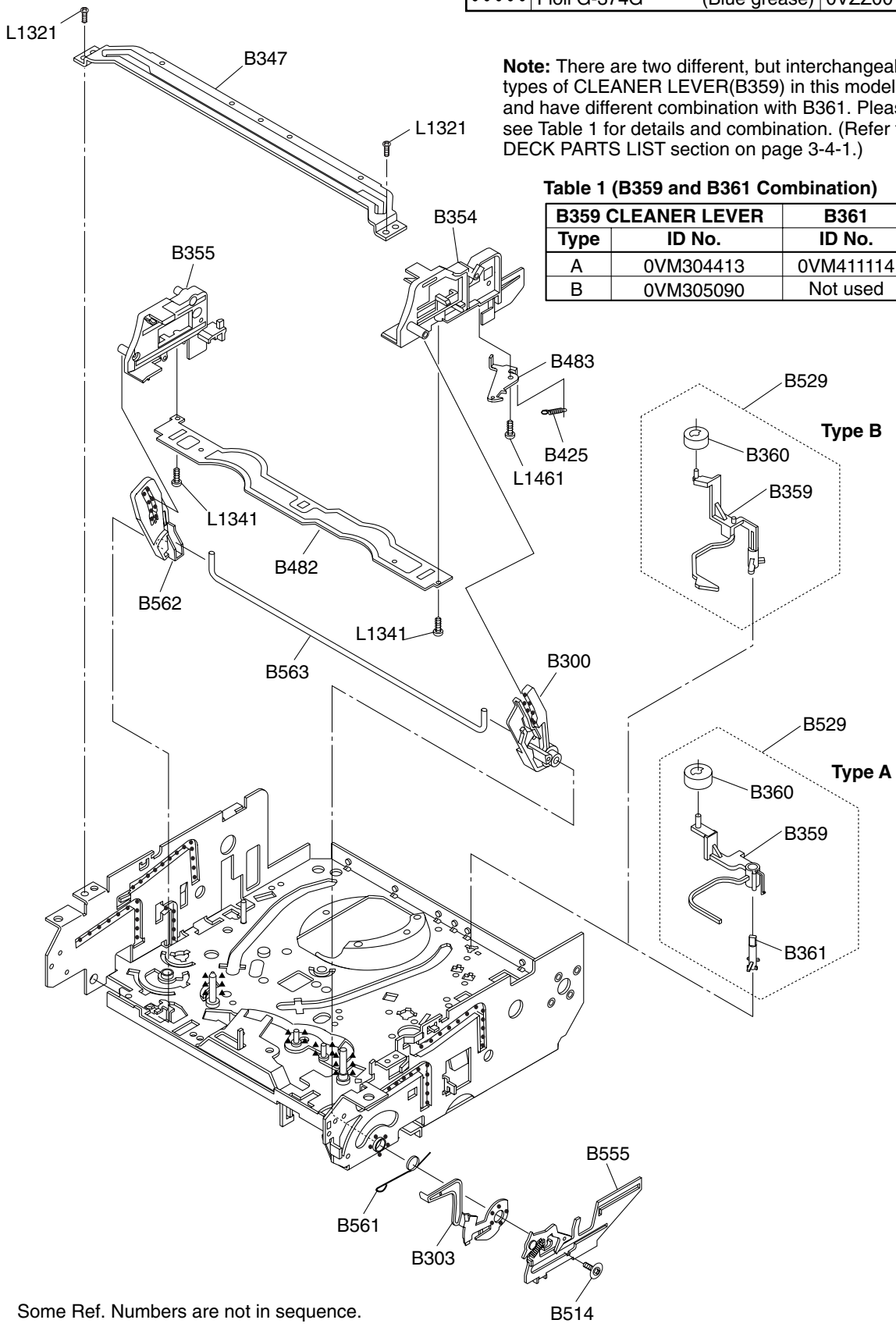
Mark	Description	Part No.
• • • • •	Floil G-374G (Blue grease)	0VZZ00109



Some Ref. Numbers are not in sequence.

Deck Mechanism View 3

Mark	Description		Part No.
• • • • •	Floil G-374G	(Blue grease)	0VZZ00109



Note: There are two different, but interchangeable types of CLEANER LEVER(B359) in this model, and have different combination with B361. Please see Table 1 for details and combination. (Refer to DECK PARTS LIST section on page 3-4-1.)

Table 1 (B359 and B361 Combination)

B359 CLEANER LEVER		B361
Type	ID No.	ID No.
A	0VM304413	0VM411114
B	0VM305090	Not used

Some Ref. Numbers are not in sequence.

MECHANICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTES:

1. Parts that are not assigned part numbers (----------) are not available.
2. Comparison Chart of Models and Marks

Model	Mark
SC309C	A
F3809U	B
6309CC	C
EWC0902	D
SSC092	E

Ref. No.	Mark	Description	Part No.
A1X	A	FRONT CABINET ASSEMBLY T4300UA	0EM201573
A1X	B	FRONT CABINET ASSEMBLY T4301UB	0EM201591
A1X	C	FRONT CABINET ASSEMBLY T4302UC	0EM201589
A1X	D	FRONT CABINET ASSEMBLY T4259UK	0EM201384
A1X	E	FRONT CABINET ASSEMBLY T4304UE	0EM201590
A1-1	A,B,C	FRONT CABINET T4000UA	0EM000351
A1-1	D	FRONT CABINET T4153UD	0EM000398
A1-1	E	FRONT CABINET T4304UE	0EM000624
A1-2	A,B	CONTROL PLATE T4300UA	0EM301592
A1-2	C	CONTROL PLATE T4302UC	0EM301593
A1-2	D	CONTROL PLATE T4003UD	0EM301286
A1-2	E	CONTROL PLATE T4304UE	0EM201587
A1-3	A	BRAND PLATE T4300UA:SYMPHONIC	0EM406938
A1-3	B	BRAND PLATE T4301UB:FUNAI	0EM407029
A1-3	C	BRAND PLATE T4302UC:SYLVANIA	0EM407030
A1-3	D	BRAND PLATE T4259UK:EMERSON	0EM406197
A1-3	E	BRAND PLATE T5307UH:SYLVANIA	0EM407053
A1-4	A,B	CASSETTE DOOR T4300UA	0EM406939
A1-4	C	CASSETTE DOOR T4302UC	0EM407059
A1-4	D	CASSETTE DOOR T4202UC	0EM406245
A1-4	E	CASSETTE DOOR T4304UE	0EM407031
A1-5		DOOR SPRING B5000UA or	0VM403773
		DOOR SPRING(Z10) T5200UA	0EM406687
A2		REAR CABINET T4300UA	0EM201565
A3⚠	A	RATING LABEL T4300UA	----------
A3⚠	B	RATING LABEL T4301UB	----------
A3⚠	C	RATING LABEL T4302UC	----------
A3⚠	D	RATING LABEL T4303UD	----------
A3⚠	E	RATING LABEL T4304UE	----------
A4	A	POP LABEL T4300UA	0EM406940
A4	B	POP LABEL T4301UB	0EM407022
A4	C	POP LABEL T4302UC	0EM407023
A4	D	POP LABEL T4303UD	0EM406976
A4	E	POP LABEL T4304UE	0EM407024
1B1		DECK ASSEMBLY CZD011/VM1426	N1426FT
B1		TENSION SPRING B0080B0:EM40808	26WH006
B2		M5 CRT SCREW(B) B4000UA	0VM403923
B3		SHIELD PLATE(Z9 9V) T4100UA	0EM405692A
B5		CLOTH 190X15XT0.5	TS7623
B8		CLOTH B0071V9:TS7346	24WE420
B10	A,B,C	CLOTH(10X30XT0.5) B5900UA	0EM404486
B11		CLOTH(10X30XT0.5) B5900UA	0EM404486
CLN801		WIRE ASSEMBLY 2P/170	WX1B4800-002
DG1601⚠		DEGAUSSING COIL F-046 or	LLBH00ZTM046
⚠		DEGAUSSING COIL AVDG142	LLBH00ZWR045
L1		SCREW, P-TIGHT 4X18 BIND HEAD +	GBMP4180
L2		SCREW, P-TIGHT 3X12 WASHER HEAD+	GCMP3120
L4	D,E	SCREW, P-TIGHT 3X10 BIND HEAD	GBUP3100
L6		SCREW, P-TIGHT 3X10 BIND HEAD+	GBKP3100
L7		SCREW, P-TIGHT 3X10 BIND HEAD+	GBKP3100
SP801	A,B,C	SPEAKER S08F02B	DSD0808XQ010
SP801	D,E	SPEAKER S08J72A1	DSD0808XQ002
TB1		TRAY CHASSIS T4300UA	0EM000590
TB2		9V TOP SHIELD T4300UA	0EM101146
TB7		LED HOLDER T4304UE	0EM406930
TB8	D,E	SPEAKER HOLDER(9V) T4153UD	0EM201173
TB11	D,E	CLOTH(10X30XT0.5) B5900UA	0EM404486
TB10		RCA HOLDER(F) T4300UA	0EM406928
TB16	A,B,C,D	PACK GUIDE L T5200UA	0EM301419
TB17	A,B,C,D	PACK GUIDE R T5200UA	0EM301420
TB19	E	JACK HOLDER T4304UE	0EM406931
TL1		SCREW, P-TIGHT 3X12 WASHER HEAD+	GCMP3120
TL3		SCREW, S-TIGHT 3X4 BIND HEAD+	GBMS3040
TL9	A,B,C,D	SCREW, P-TIGHT M3X6 BIND HEAD+	GBMP3060
TL14		SCREW, B-TIGHT M3X8 BIND HEAD+	GBMB3080
V501⚠		CRT A23KQU22X01	TCRT190SM012
PACKING			
S1	A	CARTON T4300UA	0EM407063
S1	B	CARTON T4301UB	0EM407116
S1	C	CARTON T4302UC	0EM407062
S1	D	CARTON T4303UD	0EM406975
S1	E	CARTON T4304UE	0EM407115
S2		STYROFOAM TOP T4200UA	0EM000507
S3		STYROFOAM BOTTOM ASSEMBLY T4200UA	0EM406191
S4	A	SERIAL NO. LABEL T4300UA	0EM406942
S4	B	SERIAL NO. LABEL T4301UB	0EM407064
S4	C	SERIAL NO. LABEL T4302UC	0EM407061
S4	D	SERIAL NO. LABEL T4303UD	0EM406978
S4	E	SERIAL NO. LABEL T4304UE	0EM407085
S6		SET SHEET:1000X600XT0.3 L7300UA	0EM401153
ACCESSORIES			
X1		POLYETHYLENE BAG B5310UL	Z223380
X2⚠	A	OWNER'S MANUAL T4300UA	0EMN01889
X2⚠	B	OWNER'S MANUAL T4301UB	0EMN01910
X2⚠	C	OWNER'S MANUAL T4302UC	0EMN01903
X2⚠	D	OWNER'S MANUAL T4303UD	0EMN01897
X2⚠	E	OWNER'S MANUAL T4304UE	0EMN01905
X3	A,B	REMOCON UNIT 512/ERC001/N0150UD or	N0150UD
	A,B	REMOCON UNIT 512/ERC001/N0107UD	N0107UD
X3	C	REMOCON UNIT 512/ERC001/N0151UD	N0151UD

Ref. No.	Mark	Description	Part No.
X3	D	REMOCON UNIT 512/ERC001/N0162UD or	N0162UD
	D	REMOCON UNIT 512/ERC001/N0159UD	N0159UD
X3	E	REMOCON UNIT 512/ERC001/NE108UD	NE108UD
X4		DRY BATTERY R6P UM3 or	XB0M451GH001
		DRY BATTERY R6P(AR)2PX or	XB0M451HU002
		DRY BATTERY R6P(AR)2P X ICI or	XB0M451HU003
		DRY BATTERY(SUNRISE) R6SSE/2S or	XB0M451MS002
		DRY BATTERY R6P/2S	XB0M451T0001
X6		DIPOLE ANTENNA B5307UH or	0EMN00723
		DIPOLE ANTENNA B5700UA	0EMN01183
X7	A,B	RETURN STOP SHEET L6100UA	0EM407076
X7	C,E	RETURN STOP SHEET L6101UB	0EM407077
X7	D	RETURN STOP SHEET T4259UK	0EM406203A
X16		MATCHING ADAPTOR ICM-02N or	UCPGANTPK004
		MATCHING ADAPTOR or	1813641
		MATCHING ADAPTOR	1780258
X21⚠		AC CORD SET LA-2142 or	WPV0182LW001
⚠		AC CORD HHMAC-99-0031-B	WPV0182HHH01
X22		CAR PLUG CORD	WPZ0202GA004

ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTES:

1. Parts that are not assigned part numbers (---------) are not available.
2. Tolerance of Capacitors and Resistors are noted with the following symbols.

C.....±0.25%	D.....±0.5%	F.....±1%
G.....±2%	J.....±5%	K.....±10%
M.....±20%	N.....±30%	Z.....+80/-20%

3. Comparison Chart of Models and Marks

Model	Mark
SC309C	A
F3809U	B
6309CC	C
EWC0902	D
SSC092	E

MMA CBA

Ref. No.	Mark	Description	Part No.
	A,B,C,D E	MMA CBA (MAIN CBA + SENSOR CBA) MMA CBA (MAIN CBA + SENSOR CBA) Consists of the following	0ESA04574 0ESA04686
		MAIN CBA (MCV-A) SENSOR CBA	---------- 0ESA04524

MAIN CBA

Ref. No.	Mark	Description	Part No.
		MAIN CBA Consists of the following	----------
		CAPACITORS	
C001	E	CERAMIC CAP.(AX) B K 0.01μF/50V	CA1J103TU011
C002		CERAMIC CAP.(AX) CH J 100pF/50V	CA1J101TU008
C003		CERAMIC CAP.(AX) CH J 100pF/50V	CA1J101TU008
C004		CERAMIC CAP.(AX) B K 0.01μF/50V	CA1J103TU011
C005		ELECTROLYTIC CAP. 47μF/16V M or	CE1CMASDL470
		ELECTROLYTIC CAP. 47μF/16V M	CE1CMASTL470
C006		ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL1R0
		ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL010
		ELECTROLYTIC CAP. 1μF/50V M	CE1JMASTL1R0
C007		CERAMIC CAP.(AX) B K 0.01μF/50V	CA1J103TU011
C203		CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C204		CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C205		CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C207		ELECTROLYTIC CAP. 47μF/25V M or	CE1EMASDL470
		ELECTROLYTIC CAP. 47μF/25V M	CE1EMASTL470
C208		ELECTROLYTIC CAP. 100μF/6.3V M H7	CE0KMASSL101
C209		CERAMIC CAP.(AX) F Z 0.022μF/25V	CCA1EZTFZ223
C210		ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMASSL1R0
C211		CERAMIC CAP.(AX) B K 0.01μF/50V	CA1J103TU011
C212		CERAMIC CAP.(AX) CH J 20pF/50V	CCA1JJTCH200
C213		CERAMIC CAP.(AX) CH J 20pF/50V	CCA1JJTCH200
C214		ELECTROLYTIC CAP. 100μF/6.3V M H7	CE0KMASSL101
C216		CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C217		CERAMIC CAP.(AX) CH J 10pF/50V	CCA1JJTCH100
C218		CERAMIC CAP.(AX) CH J 15pF/50V	CCA1JJTCH150
C219		CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C220		ELECTROLYTIC CAP. 47μF/6.3V M H7	CE0KMASSL470
C221		CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C222		CERAMIC CAP.(AX) X M 2200pF/16V	CCA1CMT0X222
C223		ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMASSL1R0
C224		CERAMIC CAP.(AX) B K 1000pF/50V	CCA1JKT0B102
C225		CERAMIC CAP.(AX) B K 560pF/50V	CCA1JKT0B561
C226		CERAMIC CAP.(AX) F Z 0.022μF/25V	CCA1EZTFZ223
C231		CERAMIC CAP.(AX) CH J 220pF/50V	CA1J221TU008
C232		CERAMIC CAP.(AX) CH J 220pF/50V	CA1J221TU008
C235		CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C236		CERAMIC CAP.(AX) F Z 0.047μF/16V	CCA1CZTFZ473
C238		CERAMIC CAP.(AX) B K 1000pF/50V	CCA1JKT0B102
C239		ELECTROLYTIC CAP. 22μF/50V M or	CE1JMASDL220
		ELECTROLYTIC CAP. 22μF/50V M	CE1JMASTL220
C240		CERAMIC CAP.(AX) B K 560pF/50V	CCA1JKT0B561
C241		CERAMIC CAP.(AX) B K 0.0047μF/50V	CA1J472TU011
C242		CERAMIC CAP.(AX) B K 1000pF/50V	CCA1JKT0B102
C243		ELECTROLYTIC CAP. 22μF/16V M LL or	CE1CMASLH220
		ELECTROLYTIC CAP. 22μF/16V M LL	CE1CMASLL220
C244		CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C245		ELECTROLYTIC CAP. 47μF/25V M or	CE1EMASDL470
		ELECTROLYTIC CAP. 47μF/25V M	CE1EMASTL470
C246		CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C247		ELECTROLYTIC CAP. 22μF/50V M or	CE1JMASDL220
		ELECTROLYTIC CAP. 22μF/50V M	CE1JMASTL220
C252		ELECTROLYTIC CAP. 100μF/16V M or	CE1CMASDL101
		ELECTROLYTIC CAP. 100μF/16V M	CE1CMASTL101
C253		ELECTROLYTIC CAP. 100μF/6.3V M or	CE0KMASDL101
		ELECTROLYTIC CAP. 100μF/6.3V M	CE0KMASTL101
C254		ELECTROLYTIC CAP. 47μF/25V M H7	CE1EMASSL470
C255		CARBON RES. 1/4W J 10k Ω or	RCX4JATZ0103
		CARBON RES. 1/6W J 10k Ω	RCX6JATZ0103
C256		ELECTROLYTIC CAP. 100μF/6.3V M H7	CE0KMASSL101
C257		CERAMIC CAP.(AX) F Z 0.047μF/16V	CCA1CZTFZ473
C301		ELECTROLYTIC CAP. 1μF/50V LL or	CE1JMASLH1R0
		ELECTROLYTIC CAP. 1μF/50V M LL	CE1JMASLL010
C302		CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C303		CERAMIC CAP.(AX) F Z 0.1μF/50V	CCA1JZTFZ104
C305		CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C306		ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL1R0
		ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL010
		ELECTROLYTIC CAP. 1μF/50V M	CE1JMASTL1R0
C307		ELECTROLYTIC CAP. 470μF/10V M or	CE1AMASDL471
		ELECTROLYTIC CAP. 470μF/10V M	CE1AMASTL471
C308		CERAMIC CAP.(AX) SL J 47pF/50V	CCA1JJTSL470
C309		CERAMIC CAP.(AX) SL J 47pF/50V	CCA1JJTSL470
C310		CERAMIC CAP.(AX) SL J 47pF/50V	CCA1JJTSL470
C311		CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103

Ref. No.	Mark	Description	Part No.
C314		ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
		ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL010
		ELECTROLYTIC CAP. 1µF/50V M	CE1JMASTL1R0
C315		CERAMIC CAP.(AX) F Z 0.1µF/50V	CCA1JZTFZ104
C316		CERAMIC CAP.(AX) B K 100pF/50V	CCA1JKT0B101
C317		FILM CAP.(P) 0.015µF/50V J or	CMA1JJS00153
		FILM CAP.(P) 0.015µF/50V J	CA1J153MS029
C318		ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
		ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL010
		ELECTROLYTIC CAP. 1µF/50V M	CE1JMASTL1R0
C319		ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMASSL1R0
C320		ELECTROLYTIC CAP. 100µF/10V M or	CE1AMASDL101
		ELECTROLYTIC CAP. 100µF/10V M	CE1AMASTL101
C322		ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
		ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL010
		ELECTROLYTIC CAP. 1µF/50V M	CE1JMASTL1R0
C323		ELECTROLYTIC CAP. 470µF/16V M or	CE1CMASDL471
		ELECTROLYTIC CAP. 470µF/16V M	CE1CMASTL471
C325		ELECTROLYTIC CAP. 2.2µF/50V LL or	CE1JMASLH2R2
		ELECTROLYTIC CAP. 2.2µF/50V M LL	CE1JMASLL2R2
C326		FILM CAP.(P) 0.1µF/50V J or	CMA1JJS00104
		FILM CAP.(P) 0.1µF/50V J	CA1J104MS029
C328		CERAMIC CAP.(AX) XM 3900pF/16V	CCA1CMT0X392
C329		ELECTROLYTIC CAP. 4.7µF/50V M or	CE1JMASDL4R7
		ELECTROLYTIC CAP. 4.7µF/50V M	CE1JMASTL4R7
C330		ELECTROLYTIC CAP. 0.47µF/50V M or	CE1JMASDLR47
		ELECTROLYTIC CAP. 0.47µF/50V M	CE1JMASTLR47
C331		CERAMIC CAP.(AX) B K 680pF/50V	CCA1JKT0B681
C332		CERAMIC CAP.(AX) F Z 0.047µF/16V	CCA1CZTFZ473
C333		FILM CAP.(P) 0.047µF/50V J or	CMA1JJS00473
		FILM CAP.(P) 0.047µF/50V J	CA1J473MS029
C334		ELECTROLYTIC CAP. 100µF/16V M or	CE1CMASDL101
		ELECTROLYTIC CAP. 100µF/16V M	CE1CMASTL101
C335		ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
		ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL010
		ELECTROLYTIC CAP. 1µF/50V M	CE1JMASTL1R0
C337		ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
		ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL010
		ELECTROLYTIC CAP. 1µF/50V M	CE1JMASTL1R0
C340		ELECTROLYTIC CAP. 0.1µF/50V M H7	CE1JMASSLR10
C341		ELECTROLYTIC CAP. 100µF/10V M or	CE1AMASDL101
		ELECTROLYTIC CAP. 100µF/10V M	CE1AMASTL101
C346		CERAMIC CAP.(AX) SL J 47pF/50V	CCA1JJTSL470
C410		ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMASSL1R0
C411		ELECTROLYTIC CAP. 220µF/6.3V M H7	CE0KMASSL221
C412		CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C413		CERAMIC CAP.(AX) B K 390pF/50V	CCA1JKT0B391
C414		ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMASSL1R0
C416		CERAMIC CAP.(AX) B K 180pF/50V	CCA1JKT0B181
C417		CERAMIC CAP.(AX) SL J 22pF/50V	CCA1JJTSL220
C418		PCB JUMPER D0.6-P5.0	JW5.0T
C419		ELECTROLYTIC CAP. 0.1µF/50V M H7	CE1JMASSLR10
C420		ELECTROLYTIC CAP. 22µF/16V M H7	CE1CMASSL220
C421		ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMASSL4R7
C423		ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMASSL4R7
C424		ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMASSL1R0
C425		ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMASSL1R0
C426		ELECTROLYTIC CAP. 22µF/16V M H7	CE1CMASSL220
C427		CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C428		CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C429		ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMASSL470

Ref. No.	Mark	Description	Part No.
C430		CERAMIC CAP.(AX) B K 0.022µF/50V	CA1J223TU011
C431		ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMASSL1R0
C434		ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMASSL1R0
C435		ELECTROLYTIC CAP. 2.2µF/50V M H7	CE1JMASSL2R2
C436		CERAMIC CAP.(AX) XM 3900pF/16V	CCA1CMT0X392
C438		ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMASSL1R0
C439		CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C440		ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMASSL1R0
C441		ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMASSL1R0
C442		CERAMIC CAP.(AX) F Z 0.047µF/16V	CCA1CZTFZ473
C443		CERAMIC CAP.(AX) F Z 0.047µF/16V	CCA1CZTFZ473
C444		ELECTROLYTIC CAP. 22µF/16V M H7	CE1CMASSL220
C445		CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C446		ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMASSL1R0
C447		CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C448		CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C449		CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C492		ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
		ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL010
		ELECTROLYTIC CAP. 1µF/50V M	CE1JMASTL1R0
C602⚠		SAFETY CAP. 4700pF/250V KX	CA2E472MR050
C603		CERAMIC CAP. BN 330pF/2KV or	CCD3DKA0B331
		CERAMIC CAP. LB 330pF/2KV or	CA3D331KG004
		CERAMIC CAP. 330pF/2KV	CA3D331PAN04
C605⚠		METALLIZED FILM CAP. 0.1µF/250V or	CT2E104MS037
⚠		FILM CAP.(MP) 0.1µF/250V K	CT2E104DC011
C606		CERAMIC CAP. F Z 0.01µF/500V or	CCD2JZP0F103
		CERAMIC CAP. 0.01µF/AC250V	CCD2EZA0F103
C607		CERAMIC CAP. F Z 0.01µF/500V or	CCD2JZP0F103
		CERAMIC CAP. 0.01µF/AC250V	CCD2EZA0F103
C608		CERAMIC CAP. F Z 0.01µF/500V or	CCD2JZP0F103
		CERAMIC CAP. 0.01µF/AC250V	CCD2EZA0F103
C609		CERAMIC CAP. F Z 0.01µF/500V or	CCD2JZP0F103
		CERAMIC CAP. 0.01µF/AC250V	CCD2EZA0F103
C610		ELECTROLYTIC CAPACIT0R 150µF/200V or	CA2D151S6012
		ALMINIUM ELECTROLYTIC CAP150µF/ 200V	CA2D151NC088
C611		CERAMIC CAP. BN 680pF/2KV or	CCD3DKA0B681
		CERAMIC CAP. LB 680pF/2K or	CA3D681KG004
		CERAMIC CAP. 680pF/2KV	CA3D681PAN04
C612		FILM CAP.(P) 0.033µF/50V J or	CMA1JJS00333
		FILM CAP.(P) 0.033µF/50V J	CA1J333MS029
C613		FILM CAP.(P) 0.0015µF/50V J or	CMA1JJS00152
		FILM CAP.(P) 0.0015µF/50V J	CA1J152MS029
C614		FILM CAP.(P) 0.047µF/50V J or	CMA1JJS00473
		FILM CAP.(P) 0.047µF/50V J	CA1J473MS029
C615		CERAMIC CAP. BN 680pF/2KV or	CCD3DKA0B681
		CERAMIC CAP. LB 680pF/2K or	CA3D681KG004
		CERAMIC CAP. 680pF/2KV	CA3D681PAN04
C616		ELECTROLYTIC CAP. 47µF/160V M W/F or	CE2CMZNDL470
		ELECTROLYTIC CAP. 47µF/160V M W/F	CE2CMZNTL470
C617		ELECTROLYTIC CAP. 470µF/35V M or	CE1GMASDL471
		ELECTROLYTIC CAP. 470µF/35V M	CE1GMASTL471
C618		ELECTROLYTIC CAP. 1000µF/16V M or	CE1CMZPDL102
		ELECTROLYTIC CAP. 1000µF/16V M	CE1CMZPTL102
C619		ELECTROLYTIC CAP. 470µF/16V M or	CE1CMASDL471
		ELECTROLYTIC CAP. 470µF/16V M	CE1CMASTL471
C620		ELECTROLYTIC CAP. 1000µF/16V M or	CE1CMZPDL102
		ELECTROLYTIC CAP. 1000µF/16V M	CE1CMZPTL102
C622		CERAMIC CAP.(AX) B K 150pF/50V	CCA1JKT0B151

Ref. No.	Mark	Description	Part No.
C623		FILM CAP.(P) 0.018μF/50V J or	CMA1JJS00183
		FILM CAP.(P) 0.018μF/50V J	CA1J183MS029
C624		CERAMIC CAP.(AX) B K 0.01μF/50V	CA1J103TU011
C625		ELECTROLYTIC CAP. 2.2μF/50V M or	CE1JMASDL2R2
		ELECTROLYTIC CAP. 2.2μF/50V M	CE1JMASTL2R2
C626		ELECTROLYTIC CAP. 4.7μF/50V M or	CE1JMASDL4R7
		ELECTROLYTIC CAP. 4.7μF/50V M	CE1JMASTL4R7
C628		ELECTROLYTIC CAP. 10μF/50V M or	CE1JMASDL100
		ELECTROLYTIC CAP. 10μF/50V M	CE1JMASTL100
C629		ELECTROLYTIC CAP. 47μF/25V M or	CE1EMASDL470
		ELECTROLYTIC CAP. 47μF/25V M	CE1EMASTL470
C630		ELECTROLYTIC CAP. 100μF/16V M or	CE1CMASDL101
		ELECTROLYTIC CAP. 100μF/16V M	CE1CMASTL101
C631		ELECTROLYTIC CAP. 220μF/16V M or	CE1CMASDL221
		ELECTROLYTIC CAP. 220μF/16V M	CE1CMASTL221
C632		ELECTROLYTIC CAP. 100μF/16V M or	CE1CMASDL101
		ELECTROLYTIC CAP. 100μF/16V M	CE1CMASTL101
C633		ELECTROLYTIC CAP. 470μF/10V M or	CE1AMASDL471
		ELECTROLYTIC CAP. 470μF/10V M	CE1AMASTL471
C634		ELECTROLYTIC CAP. 220μF/16V M or	CE1CMASDL221
		ELECTROLYTIC CAP. 220μF/16V M	CE1CMASTL221
C635		ELECTROLYTIC CAP. 47μF/25V M or	CE1EMASDL470
		ELECTROLYTIC CAP. 47μF/25V M	CE1EMASTL470
C636		CERAMIC CAP.(AX) F Z 0.1μF/50V	CCA1JZTFZ104
C639		CERAMIC CAP. B K 2200pF/500V or	CCD2JKP0B222
		CERAMIC CAP. B K 2200pF/500V	CCD2JKS0B222
C641		CERAMIC CAP.(AX) B K 100pF/50V	CCA1JKT0B101
C642		CERAMIC CAP.(AX) B K 1000pF/50V	CCA1JKT0B102
C801		ELECTROLYTIC CAP. 330μF/16V M or	CE1CMZPDL331
		ELECTROLYTIC CAP. 330μF/16V M	CE1CMZPTL331
C802		ELECTROLYTIC CAP. 470μF/16V M or	CE1CMASDL471
		ELECTROLYTIC CAP. 470μF/16V M	CE1CMASTL471
C803		ELECTROLYTIC CAP. 10μF/50V M or	CE1JMASDL100
		ELECTROLYTIC CAP. 10μF/50V M	CE1JMASTL100
C804		ELECTROLYTIC CAP. 0.22μF/50V M or	CE1JMASDLR22
		ELECTROLYTIC CAP. 0.22μF/50V M	CE1JMASTLR22
C805		CERAMIC CAP.(AX) X M 4700pF/16V	CCA1CMT0X472
C851		ELECTROLYTIC CAP. 220μF/6.3V M H7	CE0KMASSL221
C853		CERAMIC CAP.(AX) F Z 0.1μF/50V	CCA1JZTFZ104
C854		ELECTROLYTIC CAP. 22μF/16V M H7	CE1CMASSL220
C856		CERAMIC CAP.(AX) F Z 0.1μF/50V	CCA1JZTFZ104
C857		ELECTROLYTIC CAP. 33μF/6.3V M H7	CE0KMASSL330
C858		ELECTROLYTIC CAP. 4.7μF/50V M H7	CE1JMASSL4R7
C859		CERAMIC CAP.(AX) F Z 0.1μF/50V	CCA1JZTFZ104
C860		CERAMIC CAP.(AX) B K 1000pF/50V	CCA1JKT0B102
C862		CERAMIC CAP.(AX) Y M 0.01μF/16V	CCA1CMT0Y103
C863		ELECTROLYTIC CAP. 10μF/35V M H7	CE1GMASSL100
C864		ELECTROLYTIC CAP. 10μF/35V M H7	CE1GMASSL100
C865		CERAMIC CAP.(AX) B K 1000pF/50V	CCA1JKT0B102
C866		CERAMIC CAP.(AX) X M 2200pF/16V	CCA1CMT0X222
C872		ELECTROLYTIC CAP. 47μF/6.3V M H7	CE0KMASSL470
C873		ELECTROLYTIC CAP. 100μF/16V M H7	CE1CMASSL101
C874		CERAMIC CAP. B K 470pF/100V or	CCD2AKS0B471
		CERAMIC CAP. B K 470pF/500V	CCD2JKS0B471
C875		FILM CAP.(P) 0.018μF/100V J or	CMA2AJS00183
		FILM CAP.(P) 0.018μF/50V J	CA1J183MS029
C969		ELECTROLYTIC CAP. 4.7μF/25V M or	CE1EMASDL4R7
		ELECTROLYTIC CAP. 4.7μF/25V M	CE1EMASTL4R7
CONNECTORS			
CN301		CONNECTOR BASE 11P TUC-P11P-B1	J3TUA11TG001
CN302		CONNECTOR BASE, 5P TUC-P05P-B1	J3TUA05TG001

Ref. No.	Mark	Description	Part No.
CN601		CONNECTOR BASE, 2P TV-50P-02-V3 or	J3TVC02TG002
		CONNECTOR BASE, 2P RTB-1.5-2P	J3RTC02JG001
CN602		CONNECTOR BASE, 14P TUC-P14P-B1	J3TUA14TG001
CN801		STRAIGHT CONNECTOR BASE 00 8283 0212 00 000 or	J383C02UG002
		STRAIGHT PIN HEADER, 2P 173981-2	1770258
DIODES			
D001		ZENER DIODE MTZJT-778.2B or	QDTB0MTZJ8R2
		ZENER DIODE DZ-8.2BSBT265	NDTB0DZ8R2BS
D203		LED SIR-563ST3F P or	QPQPS1R563ST
		LED SIR-563ST3F Q	QPQQS1R563ST
D204		LED LTL-4214M1 or	NPQZLTL4214M
		LED(RED)L-FORMING LT1814G-81-FL or	NP4Z0LT1814G
		LED L-53HT or	NP4Z000L53HT
		LED LAMP 333HT/F45-50K or	NPWK333HTF45
		LED LAMP 333HT/F45-50L or	NPWL333HTF45
		LED LAMP 333HT/F45-50M	NPWM333HTF45
D210		ZENER DIODE MTZJT-775.6B or	QDTB0MTZJ5R6
		ZENER DIODE DZ-5.6BSBT265	NDTB0DZ5R6BS
D215		CARBON RES. 1/4W J 680 Ω or	RCX4JATZ0681
		CARBON RES. 1/6W J 680 Ω	RCX6JATZ0681
D216		ZENER DIODE MTZJT-775.6B or	QDTB0MTZJ5R6
		ZENER DIODE DZ-5.6BSBT265	NDTB0DZ5R6BS
D301		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D302		ZENER DIODE MTZJT-778.2B or	QDTB0MTZJ8R2
		ZENER DIODE DZ-8.2BSBT265	NDTB0DZ8R2BS
D303		ZENER DIODE MTZJT-776.8C or	QDTC0MTZJ6R8
		ZENER DIODE DZ-6.8BSCT265	NDTC0DZ6R8BS
D304		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D305		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D306		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D307		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D308		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D309		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D310		PCB JUMPER D0.6-P5.0	JW5.0T
D311		ZENER DIODE MTZJT-778.2B or	QDTB0MTZJ8R2
		ZENER DIODE DZ-8.2BSBT265	NDTB0DZ8R2BS
D313		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D314		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D315		ZENER DIODE MTZJT-778.2B or	QDTB0MTZJ8R2
		ZENER DIODE DZ-8.2BSBT265	NDTB0DZ8R2BS
D316		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D317		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D401		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D602		PCB JUMPER D0.6-P15.0	JW15.0T
D603		DIODE 1N5397-B or	NDLZ001N5397
		RECTIFIER DIODE ERB12-06	QDQZ0ERB1206
D604		DIODE 1N5397-B or	NDLZ001N5397
		RECTIFIER DIODE ERB12-06	QDQZ0ERB1206

Ref. No.	Mark	Description	Part No.
D605		DIODE 1N5397-B or	NDLZ001N5397
		RECTIFIER DIODE ERB12-06	QDQZ0ERB1206
D606		DIODE 1N5397-B or	NDLZ001N5397
		RECTIFIER DIODE ERB12-06	QDQZ0ERB1206
D607		ZENER DIODE MTZJT-7720C or	QDTC00MTZJ20
		ZENER DIODE DZ-20BSCT265	NDTC00DZ20BS
D609		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D610		ZENER DIODE MTZJT-775.6B or	QDTB0MTZJ5R6
		ZENER DIODE DZ-5.6BSBT265	NDTB0DZ5R6BS
D611		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D613		FAST RECOVERY DIODE CA201-4 or	QDWZ00CA2014
		RECOVERY DIODE ERC18-04 or	QDZZ0ERC1804
		FAST RECOVERY DIODE ERC25-06	QDQZ0ERC2506
D614		DIODE FR104-B or	NDLZ000FR104
		RECTIFIER DIODE 10ELS2 or	QDQZ0010ELS2
		RECTIFIER DIODE ERA22-02	QDPZ0ERA2202
D615		DIODE 1ZC30 or	QDQZ0001ZC30
		ZENER DIODE RD30FB	QDQZ000RD30F
D616		SCHOTTKY BARRIER DIODE 21DQ04 or	QDQZ0021DQ04
		SCHOTTKY BARRIER DIODE ERB81-004	AERB81004***
D617		SCHOTTKY BARRIER DIODE 11EQS04 or	QD4Z011EQS04
		SCHOTTKY BARRIER DIODE ERA81-004	QDPZERA81004
D618		SCHOTTKY BARRIER DIODE 11EQS04 or	QD4Z011EQS04
		SCHOTTKY BARRIER DIODE ERA81-004	QDPZERA81004
D619		DIODE FR104-B or	NDLZ000FR104
		RECTIFIER DIODE 10ELS2 or	QDQZ0010ELS2
		RECTIFIER DIODE ERA22-02	QDPZ0ERA2202
D620		ZENER DIODE MTZJT-776.8B or	QDTB0MTZJ6R8
		ZENER DIODE DZ-6.8BSBT265	NDTB0DZ6R8BS
D621		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D622		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D623		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D625		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D626		ZENER DIODE MTZJT-7736A or	QDTA00MTZJ36
		ZENER DIODE DZ-36BSAT265	NDTA00DZ36BS
D627		ZENER DIODE MTZJT-7711A or	QDTA00MTZJ11
		ZENER DIODE DZ-11BSAT265	NDTA00DZ11BS
D628		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D629		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D630⚠		ZENER DIODE MTZJT-7718B or	QDTB00MTZJ18
⚠		ZENER DIODE DZ-18BSBT265	NDTB00DZ18BS
D631		ZENER DIODE MTZJT-776.8A or	QDTA0MTZJ6R8
		ZENER DIODE DZ-6.8BSAT265	NDTA0DZ6R8BS
D632		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D633		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D634		ZENER DIODE MTZJT-778.2B or	QDTB0MTZJ8R2
		ZENER DIODE DZ-8.2BSBT265	NDTB0DZ8R2BS
D635		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D636		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D637		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D638		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D640		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D641		ZENER DIODE MTZJT-7736A or	QDTA00MTZJ36
		ZENER DIODE DZ-36BSAT265	NDTA00DZ36BS
D646		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D649		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D650		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D651		ZENER DIODE MTZJT-7720C or	QDTC00MTZJ20
		ZENER DIODE DZ-20BSCT265	NDTC00DZ20BS
D801		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D802		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D803		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D961		ZENER DIODE MTZJT-775.6B or	QDTB0MTZJ5R6
		ZENER DIODE DZ-5.6BSBT265	NDTB0DZ5R6BS
D962		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D963		ZENER DIODE MTZJT-775.1A or	QDTA0MTZJ5R1
		ZENER DIODE DZ-5.1BSAT265	NDTA0DZ5R1BS
D964		SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
		SWITCHING DIODE 1N4148	NDTZ001N4148
D965		ZENER DIODE MTZJT-776.2B or	QDTB0MTZJ6R2
		ZENER DIODE DZ-6.2BSBT265	NDTB0DZ6R2BS
ICS			
IC201⚠		MICROCONTROLLER 16BIT M37760M8H8C8GP	QSZAB0RMB095
IC202		IC:MEMORY BR24C02F-W or	QSMBA0SRM003
		IC:MEMORY AT24C02N-10SC or	NSMMA0SAZ012
		IC(EEPROM) M24C02-MN6 or	NSMMA0SSS028
		IC:MEMORY BR24C02F	QSMMA0SRM003
IC301⚠		IC:CHROMA/IF 1 CHIP M61210FP-R60* or	QSZAA0RMB086
⚠		IC:CHROMA/IF 1 CHIP M61210FP-R61 or	QSZAB0RMB086
⚠		IC:CHROMA/IF 1 CHIP M61210FP-R62*	QSZAC0RMB086
IC401		IC:Y/C/A LA71091M	QSZBA0RSY012
IC601⚠		PHOTOCOUPLER LTV-817B-F or	NPEB0LTV817F
⚠		PHOTOCOUPLER LTV-817C-F or	NPEC0LTV817F
⚠		PHOTO COUPLER PC817X6	QPE600PC817X
IC602⚠		VOLTAGE REGULATOR KIA7805API or	NSBBA0SJY011
⚠		VOLTAGE REGULATOR KA7805A or	NSZBA0SF3052
⚠		IC:VOLTAGE REGULATOR AN7805F	AN7805F
IC801		AUDIO AMP LA4224	QSZAA0SSY005
COILS			
L201		PCB JUMPER D0.6-P5.0	JW5.0T
L202		INDUCTOR 0.10μH-K-26T	LLAXKATTUR10
L211		CHOKE COIL 47μH-K	LLBD00PKV007
L301		PCB JUMPER D0.6-P5.0	JW5.0T
L302		INDUCTOR 100μH-J-5FT or	LLARJCSTU101
		INDUCTOR 100μH-K-5FT	LLARKDSKA101
L303		INDUCTOR 12μH-J-26T or	LLAXJATTU120
		INDUCTOR 12μH-K-26T	LLAXKDTKA120
L305		INDUCTOR 1.0μH-J-26T or	LLAXJATTU1R0

Ref. No.	Mark	Description	Part No.
		INDUCTOR 1.0μH-K-26T	LLAXKDTKA1R0
L306		PCB JUMPER D0.6-P5.0	JW5.0T
L307		INDUCTOR 15μH-J-26T or	LLAXJATTU150
		INDUCTOR 15μH-K-26T	LLAXKDTKA150
L402		INDUCTOR 12μH-J-26T or	LLAXJATTU120
		INDUCTOR 12μH-K-26T	LLAXKDTKA120
L403		CHOKE COIL 47μH-K	LLBD00PKV007
L404		CHOKE COIL 47μH-K	LLBD00PKV007
L601⚠		LINE FILTER SA-91213B or	LLBG00ZSA002
⚠		LINE FILTER TLF12UA302W1R0 or	LLBG00ZTU025
⚠		LINE FILTER 5.0MH 6Y075 or	LLBG00ZKT004
⚠		LINE FILTER UU10.5-A or	LLBG00ZY2008
⚠		LINE FILTER TLF14CB3321R0 or	LLBG00ZTU012
⚠		LINE FILTER 6.35MH UU10-002	LLBG00ZKV001
L871		PCB JUMPER D0.6-P5.0	JW5.0T
L872		INDUCTOR 47μH-K-5FT or	LLARKBSTU470
		INDUCTOR 47μH-K-5FT	LLARKDSKA470
TRANSISTORS			
Q205		TRANSISTOR 2SC2785(F) or	QQSF02SC2785
		TRANSISTOR 2SC2785(H) or	QQSH02SC2785
		TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR KTC3198(GR) or	NQS40KTC3198
		TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q206		PHOTO TRANSISTOR PT204-6B-12 or	NPWZT2046B12
		PHOTO TRANSISTOR MID-32A22	NPWZM1D32A22
Q301		TRANSISTOR 2SC2785(F) or	QQSF02SC2785
		TRANSISTOR 2SC2785(H) or	QQSH02SC2785
		TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR KTC3198(GR) or	NQS40KTC3198
		TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q302		TRANSISTOR 2SC2785(F) or	QQSF02SC2785
		TRANSISTOR 2SC2785(H) or	QQSH02SC2785
		TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR KTC3198(GR) or	NQS40KTC3198
		TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q401		TRANSISTOR 2SA1175(F) or	QQSF02SA1175
		TRANSISTOR KTA1267(GR) or	NQS10KTA1267
		TRANSISTOR KTA1266(GR)	NQS40KTA1266
Q402		TRANSISTOR 2SA1175(F) or	QQSF02SA1175
		TRANSISTOR KTA1267(GR) or	NQS10KTA1267
		TRANSISTOR KTA1266(GR)	NQS40KTA1266
Q491		TRANSISTOR 2SC2785(F) or	QQSF02SC2785
		TRANSISTOR 2SC2785(H) or	QQSH02SC2785
		TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR KTC3198(GR) or	NQS40KTC3198
		TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q601		MOS FET 2SK2662	QF5Z02SK2662
Q602⚠		TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
⚠		TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q604⚠		TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
⚠		TRANSISTOR 2SC3331(U) or	QSC3331UNPAA
⚠		TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q605		TRANSISTOR 2SC2785(F) or	QQSF02SC2785
		TRANSISTOR 2SC2785(H) or	QQSH02SC2785
		TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR KTC3198(GR) or	NQS40KTC3198

Ref. No.	Mark	Description	Part No.
		TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q606		TRANSISTOR 2SA950(O) or	Q2SA9500TPE2
		TRANSISTOR 2SA950(Y) or	Q2SA950YTPE2
		TRANSISTOR KTA1271(Y)	NQSY0KTA1271
Q607		TRANSISTOR 2SC2785(F) or	QQSF02SC2785
		TRANSISTOR 2SC2785(H) or	QQSH02SC2785
		TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR KTC3198(GR) or	NQS40KTC3198
		TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q608		TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
		TRANSISTOR 2SC2120-Y(TPE2) or	QQSY02SC2120
		TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q609		TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
		TRANSISTOR 2SC2120-Y(TPE2) or	QQSY02SC2120
		TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q610		TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
		TRANSISTOR 2SC2120-Y(TPE2) or	QQSY02SC2120
		TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q611⚠		TRANSISTOR 2SD400(F)	QQUF002SD400
Q612		RES. BUILT-IN TRANSISTOR KRA103M or	NQSZ0KRA103M
		RES. BUILT-IN TRANSISTOR BN1F4M-T	QQSZ00BN1F4M
Q871		TRANSISTOR 2SA1175(F) or	QQSF02SA1175
		TRANSISTOR KTA1267(GR) or	NQS10KTA1267
		TRANSISTOR KTA1266(GR)	NQS40KTA1266
Q872		TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
		TRANSISTOR 2SC2120-Y(TPE2) or	QQSY02SC2120
		TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q873		TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
		TRANSISTOR 2SC3331(U) or	QSC3331UNPAA
		TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q874		TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
		TRANSISTOR 2SC3331(U) or	QSC3331UNPAA
		TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q875		RES. BUILT-IN TRANSISTOR KRA103M or	NQSZ0KRA103M
		RES. BUILT-IN TRANSISTOR BN1F4M-T	QQSZ00BN1F4M
Q958		TRANSISTOR 2SC2785(F) or	QQSF02SC2785
		TRANSISTOR 2SC2785(H) or	QQSH02SC2785
		TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR KTC3198(GR) or	NQS40KTC3198
		TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
RESISTORS			
R001		CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
		CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R004		CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
		CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R201		CARBON RES. 1/4W G 4.7k Ω or	RCX4GATZ0472
		CARBON RES. 1/6W G 4.7k Ω	RCX6GATZ0472
R202		CARBON RES. 1/4W G 22k Ω or	RCX4GATZ0223
		CARBON RES. 1/6W G 22k Ω	RCX6GATZ0223
R203		CARBON RES. 1/4W G 470 Ω or	RCX4GATZ0471
		CARBON RES. 1/6W G 470 Ω	RCX6GATZ0471
R204		CARBON RES. 1/4W G 1.5k Ω or	RCX4GATZ0152
		CARBON RES. 1/6W G 1.5k Ω	RCX6GATZ0152
R205		CARBON RES. 1/4W G 3.6k Ω or	RCX4GATZ0362
		CARBON RES. 1/6W G 3.6k Ω	RCX6GATZ0362
R206		CARBON RES. 1/4W G 10k Ω or	RCX4GATZ0103
		CARBON RES. 1/6W G 10k Ω	RCX6GATZ0103
R207		CARBON RES. 1/4W J 22k Ω or	RCX4JATZ0223
		CARBON RES. 1/6W J 22k Ω	RCX6JATZ0223

Ref. No.	Mark	Description	Part No.
R208		CARBON RES. 1/4W J 22k Ω or	RCX4JATZ0223
		CARBON RES. 1/6W J 22k Ω	RCX6JATZ0223
R209		CARBON RES. 1/4W J 10k Ω or	RCX4JATZ0103
		CARBON RES. 1/6W J 10k Ω	RCX6JATZ0103
R210		CARBON RES. 1/4W J 1.5k Ω or	RCX4JATZ0152
		CARBON RES. 1/6W J 1.5k Ω	RCX6JATZ0152
R211		CARBON RES. 1/4W J 1.5k Ω or	RCX4JATZ0152
		CARBON RES. 1/6W J 1.5k Ω	RCX6JATZ0152
R212		CARBON RES. 1/4W J 2.2k Ω or	RCX4JATZ0222
		CARBON RES. 1/6W J 2.2k Ω	RCX6JATZ0222
R213		CARBON RES. 1/4W J 2.7k Ω or	RCX4JATZ0272
		CARBON RES. 1/6W J 2.7k Ω	RCX6JATZ0272
R214		CARBON RES. 1/4W J 10k Ω or	RCX4JATZ0103
		CARBON RES. 1/6W J 10k Ω	RCX6JATZ0103
R215		CARBON RES. 1/4W J 1.5k Ω or	RCX4JATZ0152
		CARBON RES. 1/6W J 1.5k Ω	RCX6JATZ0152
R216		CARBON RES. 1/4W J 1.5k Ω or	RCX4JATZ0152
		CARBON RES. 1/6W J 1.5k Ω	RCX6JATZ0152
R217		CARBON RES. 1/4W J 2.2k Ω or	RCX4JATZ0222
		CARBON RES. 1/6W J 2.2k Ω	RCX6JATZ0222
R218		CARBON RES. 1/4W J 2.7k Ω or	RCX4JATZ0272
		CARBON RES. 1/6W J 2.7k Ω	RCX6JATZ0272
R219		CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
		CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R220		CARBON RES. 1/4W J 390k Ω or	RCX4JATZ0394
		CARBON RES. 1/6W J 390k Ω	RCX6JATZ0394
R221		CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
		CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R222		CARBON RES. 1/4W J 390k Ω or	RCX4JATZ0394
		CARBON RES. 1/6W J 390k Ω	RCX6JATZ0394
R223		CARBON RES. 1/4W J 560 Ω or	RCX4JATZ0561
		CARBON RES. 1/6W J 560 Ω	RCX6JATZ0561
R225		CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
		CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R226		PCB JUMPER D0.6-P5.0	JW5.0T
R227		CARBON RES. 1/4W J 270 Ω or	RCX4JATZ0271
		CARBON RES. 1/6W J 270 Ω	RCX6JATZ0271
R229		CARBON RES. 1/4W J 390 Ω or	RCX4JATZ0391
		CARBON RES. 1/6W J 390 Ω	RCX6JATZ0391
R233		CARBON RES. 1/4W J 2.2k Ω or	RCX4JATZ0222
		CARBON RES. 1/6W J 2.2k Ω	RCX6JATZ0222
R234		CARBON RES. 1/4W J 1.2k Ω or	RCX4JATZ0122
		CARBON RES. 1/6W J 1.2k Ω	RCX6JATZ0122
R235		CARBON RES. 1/4W J 47 Ω or	RCX4JATZ0470
		CARBON RES. 1/6W J 47 Ω	RCX6JATZ0470
R236		CARBON RES. 1/4W J 100k Ω or	RCX4JATZ0104
		CARBON RES. 1/6W J 100k Ω	RCX6JATZ0104
R237		PCB JUMPER D0.6-P5.0	JW5.0T
R238		CARBON RES. 1/4W J 470k Ω or	RCX4JATZ0474
		CARBON RES. 1/6W J 470k Ω	RCX6JATZ0474
R239		CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
		CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R240		PCB JUMPER D0.6-P5.0	JW5.0T
R241		CARBON RES. 1/4W J 5.6k Ω or	RCX4JATZ0562
		CARBON RES. 1/6W J 5.6k Ω	RCX6JATZ0562
R243		CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
		CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R244		CARBON RES. 1/4W J 1M Ω or	RCX4JATZ0105
		CARBON RES. 1/6W J 1M Ω	RCX6JATZ0105
R245		CARBON RES. 1/4W J 470 Ω or	RCX4JATZ0471
		CARBON RES. 1/6W J 470 Ω	RCX6JATZ0471

Ref. No.	Mark	Description	Part No.
R247		CARBON RES. 1/4W J 820 Ω or	RCX4JATZ0821
		CARBON RES. 1/6W J 820 Ω	RCX6JATZ0821
R248		CARBON RES. 1/4W J 470 Ω or	RCX4JATZ0471
		CARBON RES. 1/6W J 470 Ω	RCX6JATZ0471
R249		CARBON RES. 1/4W J 3.3k Ω or	RCX4JATZ0332
		CARBON RES. 1/6W J 3.3k Ω	RCX6JATZ0332
R250		CARBON RES. 1/4W J 1.5k Ω or	RCX4JATZ0152
		CARBON RES. 1/6W J 1.5k Ω	RCX6JATZ0152
R251		CARBON RES. 1/4W J 3.3k Ω or	RCX4JATZ0332
		CARBON RES. 1/6W J 3.3k Ω	RCX6JATZ0332
R252		CARBON RES. 1/4W J 1.5k Ω or	RCX4JATZ0152
		CARBON RES. 1/6W J 1.5k Ω	RCX6JATZ0152
R253		CARBON RES. 1/4W J 3.3k Ω or	RCX4JATZ0332
		CARBON RES. 1/6W J 3.3k Ω	RCX6JATZ0332
R254		CARBON RES. 1/4W J 1.5k Ω or	RCX4JATZ0152
		CARBON RES. 1/6W J 1.5k Ω	RCX6JATZ0152
R255		CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
		CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R256		CARBON RES. 1/4W J 5.6k Ω or	RCX4JATZ0562
		CARBON RES. 1/6W J 5.6k Ω	RCX6JATZ0562
R257		PCB JUMPER D0.6-P5.0	JW5.0T
R258		CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
		CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R259		CARBON RES. 1/4W J 5.6k Ω or	RCX4JATZ0562
		CARBON RES. 1/6W J 5.6k Ω	RCX6JATZ0562
R260		PCB JUMPER D0.6-P5.0	JW5.0T
R261		PCB JUMPER D0.6-P5.0	JW5.0T
R263		CARBON RES. 1/4W J 68k Ω or	RCX4JATZ0683
		CARBON RES. 1/6W J 68k Ω	RCX6JATZ0683
R264		CARBON RES. 1/4W J 220k Ω or	RCX4JATZ0224
		CARBON RES. 1/6W J 220k Ω	RCX6JATZ0224
R267		CARBON RES. 1/4W J 33k Ω or	RCX4JATZ0333
		CARBON RES. 1/6W J 33k Ω	RCX6JATZ0333
R269		PCB JUMPER D0.6-P5.0	JW5.0T
R270		CARBON RES. 1/4W J 100k Ω or	RCX4JATZ0104
		CARBON RES. 1/6W J 100k Ω	RCX6JATZ0104
R271		CARBON RES. 1/4W J 10k Ω or	RCX4JATZ0103
		CARBON RES. 1/6W J 10k Ω	RCX6JATZ0103
R273		CARBON RES. 1/4W J 1.8k Ω or	RCX4JATZ0182
		CARBON RES. 1/6W J 1.8k Ω	RCX6JATZ0182
R274		CARBON RES. 1/4W J 680 Ω or	RCX4JATZ0681
		CARBON RES. 1/6W J 680 Ω	RCX6JATZ0681
R275		CARBON RES. 1/4W J 22k Ω or	RCX4JATZ0223
		CARBON RES. 1/6W J 22k Ω	RCX6JATZ0223
R276		CARBON RES. 1/4W J 47k Ω or	RCX4JATZ0473
		CARBON RES. 1/6W J 47k Ω	RCX6JATZ0473
R277		CARBON RES. 1/4W J 47k Ω or	RCX4JATZ0473
		CARBON RES. 1/6W J 47k Ω	RCX6JATZ0473
R278		CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
		CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R280		CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
		CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R289		PCB JUMPER D0.6-P5.0	JW5.0T
R290		PCB JUMPER D0.6-P5.0	JW5.0T
R291		CARBON RES. 1/4W J 10k Ω or	RCX4JATZ0103
		CARBON RES. 1/6W J 10k Ω	RCX6JATZ0103
R292		CARBON RES. 1/4W J 22k Ω or	RCX4JATZ0223
		CARBON RES. 1/6W J 22k Ω	RCX6JATZ0223
R301		CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
		CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R302		CARBON RES. 1/4W J 15k Ω or	RCX4JATZ0153

Ref. No.	Mark	Description	Part No.
		CARBON RES. 1/6W J 15k Ω	RCX6JATZ0153
R303		CARBON RES. 1/4W J 10k Ω or	RCX4JATZ0103
		CARBON RES. 1/6W J 10k Ω	RCX6JATZ0103
R304		CARBON RES. 1/4W J 18k Ω or	RCX4JATZ0183
		CARBON RES. 1/6W J 18k Ω	RCX6JATZ0183
R305		CARBON RES. 1/4W J 10 Ω or	RCX4JATZ0100
		CARBON RES. 1/6W J 10 Ω	RCX6JATZ0100
R306		CARBON RES. 1/4W J 6.8k Ω or	RCX4JATZ0682
		CARBON RES. 1/6W J 6.8k Ω	RCX6JATZ0682
R307		CARBON RES. 1/4W J 10k Ω or	RCX4JATZ0103
		CARBON RES. 1/6W J 10k Ω	RCX6JATZ0103
R308		CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
		CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R309		CARBON RES. 1/4W J 22 Ω or	RCX4JATZ0220
		CARBON RES. 1/6W J 22 Ω	RCX6JATZ0220
R310		CARBON RES. 1/4W J 3.3k Ω or	RCX4JATZ0332
		CARBON RES. 1/6W J 3.3k Ω	RCX6JATZ0332
R311		CARBON RES. 1/4W J 3.3k Ω or	RCX4JATZ0332
		CARBON RES. 1/6W J 3.3k Ω	RCX6JATZ0332
R312		CARBON RES. 1/4W J 3.3k Ω or	RCX4JATZ0332
		CARBON RES. 1/6W J 3.3k Ω	RCX6JATZ0332
R313		CARBON RES. 1/4W J 330 Ω or	RCX4JATZ0331
		CARBON RES. 1/6W J 330 Ω	RCX6JATZ0331
R314		CARBON RES. 1/4W J 330 Ω or	RCX4JATZ0331
		CARBON RES. 1/6W J 330 Ω	RCX6JATZ0331
R315		CARBON RES. 1/4W J 330 Ω or	RCX4JATZ0331
		CARBON RES. 1/6W J 330 Ω	RCX6JATZ0331
R317		CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
		CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R318		CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
		CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R319		CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
		CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R320		CARBON RES. 1/4W J 120k Ω or	RCX4JATZ0124
		CARBON RES. 1/6W J 120k Ω	RCX6JATZ0124
R321		CARBON RES. 1/4W J 180k Ω or	RCX4JATZ0184
		CARBON RES. 1/6W J 180k Ω	RCX6JATZ0184
R322		CARBON RES. 1/4W J 15k Ω or	RCX4JATZ0153
		CARBON RES. 1/6W J 15k Ω	RCX6JATZ0153
R323		CARBON RES. 1/4W J 6.8k Ω or	RCX4JATZ0682
		CARBON RES. 1/6W J 6.8k Ω	RCX6JATZ0682
R324		CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
		CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R325		CARBON RES. 1/4W J 10k Ω or	RCX4JATZ0103
		CARBON RES. 1/6W J 10k Ω	RCX6JATZ0103
R326		CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
		CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R328		CARBON RES. 1/4W J 10M Ω or	RCX4JATZ0106
		CARBON RES. 1/6W J 10M Ω	RCX6JATZ0106
R329		CARBON RES. 1/4W J 1M Ω or	RCX4JATZ0105
		CARBON RES. 1/6W J 1M Ω	RCX6JATZ0105
R330		CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
		CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R331		CARBON RES. 1/4W J 15 Ω or	RCX4JATZ0150
		CARBON RES. 1/6W J 15 Ω	RCX6JATZ0150
R332		CARBON RES. 1/4W J 150 Ω or	RCX4JATZ0151
		CARBON RES. 1/6W J 150 Ω	RCX6JATZ0151
R333	A,B,C ,D	CARBON RES. 1/4W J 27 Ω or	RCX4JATZ0270
	A,B,C ,D	CARBON RES. 1/6W J 27 Ω	RCX6JATZ0270

Ref. No.	Mark	Description	Part No.
R333	E	PCB JUMPER D0.6-P5.0	JW5.0T
R334		PCB JUMPER D0.6-P5.0	JW5.0T
R335		CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
		CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R336		CARBON RES. 1/4W J 390 Ω or	RCX4JATZ0391
		CARBON RES. 1/6W J 390 Ω	RCX6JATZ0391
R337		CARBON RES. 1/4W J 220 Ω or	RCX4JATZ0221
		CARBON RES. 1/6W J 220 Ω	RCX6JATZ0221
R338		PCB JUMPER D0.6-P5.0	JW5.0T
R339		CARBON RES. 1/4W J 56 Ω or	RCX4JATZ0560
		CARBON RES. 1/6W J 56 Ω	RCX6JATZ0560
R340		CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
		CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R341		CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
		CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R342		CARBON RES. 1/4W J 10k Ω or	RCX4JATZ0103
		CARBON RES. 1/6W J 10k Ω	RCX6JATZ0103
R343		CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
		CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R345		PCB JUMPER D0.6-P5.0	JW5.0T
R391		CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
		CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R392		CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
		CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R393		CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
		CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R394		CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
		CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R406		CARBON RES. 1/4W J 47k Ω or	RCX4JATZ0473
		CARBON RES. 1/6W J 47k Ω	RCX6JATZ0473
R407		CARBON RES. 1/4W J 47k Ω or	RCX4JATZ0473
		CARBON RES. 1/6W J 47k Ω	RCX6JATZ0473
R409		CARBON RES. 1/4W J 18k Ω or	RCX4JATZ0183
		CARBON RES. 1/6W J 18k Ω	RCX6JATZ0183
R413		CARBON RES. 1/4W J 39k Ω or	RCX4JATZ0393
		CARBON RES. 1/6W J 39k Ω	RCX6JATZ0393
R414		CARBON RES. 1/4W J 4.7k Ω or	RCX4JATZ0472
		CARBON RES. 1/6W J 4.7k Ω	RCX6JATZ0472
R415		CARBON RES. 1/4W J 1.5k Ω or	RCX4JATZ0152
		CARBON RES. 1/6W J 1.5k Ω	RCX6JATZ0152
R416		CARBON RES. 1/4W J 100k Ω or	RCX4JATZ0104
		CARBON RES. 1/6W J 100k Ω	RCX6JATZ0104
R417		CARBON RES. 1/4W J 220 Ω or	RCX4JATZ0221
		CARBON RES. 1/6W J 220 Ω	RCX6JATZ0221
R418		CARBON RES. 1/4W J 270 Ω or	RCX4JATZ0271
		CARBON RES. 1/6W J 270 Ω	RCX6JATZ0271
R419		CARBON RES. 1/4W J 220 Ω or	RCX4JATZ0221
		CARBON RES. 1/6W J 220 Ω	RCX6JATZ0221
R420		CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
		CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R421		PCB JUMPER D0.6-P5.0	JW5.0T
R423		CARBON RES. 1/4W J 5.6M Ω	RCX4JATZ0565
R424		CARBON RES. 1/4W J 100k Ω or	RCX4JATZ0104
		CARBON RES. 1/6W J 100k Ω	RCX6JATZ0104
R425		CARBON RES. 1/4W J 82k Ω or	RCX4JATZ0823
		CARBON RES. 1/6W J 82k Ω	RCX6JATZ0823
R426		CARBON RES. 1/4W J 2.2k Ω or	RCX4JATZ0222
		CARBON RES. 1/6W J 2.2k Ω	RCX6JATZ0222
R427		CARBON RES. 1/4W J 820 Ω or	RCX4JATZ0821
		CARBON RES. 1/6W J 820 Ω	RCX6JATZ0821
R428		CARBON RES. 1/4W J 680k Ω or	RCX4JATZ0684

Ref. No.	Mark	Description	Part No.
		CARBON RES. 1/6W J 680k Ω	RCX6JATZ0684
R429		CARBON RES. 1/4W J 1.5k Ω or	RCX4JATZ0152
		CARBON RES. 1/6W J 1.5k Ω	RCX6JATZ0152
R431		CARBON RES. 1/4W J 8.2k Ω or	RCX4JATZ0822
		CARBON RES. 1/6W J 8.2k Ω	RCX6JATZ0822
R435		CARBON RES. 1/4W J 1.8k Ω or	RCX4JATZ0182
		CARBON RES. 1/6W J 1.8k Ω	RCX6JATZ0182
R495		CARBON RES. 1/4W J 47k Ω or	RCX4JATZ0473
		CARBON RES. 1/6W J 47k Ω	RCX6JATZ0473
R496		CARBON RES. 1/4W J 2.2M Ω or	RCX4JATZ0225
		CARBON RES. 1/6W J 2.2M Ω	RCX6JATZ0225
R497		CARBON RES. 1/4W J 12k Ω or	RCX4JATZ0123
		CARBON RES. 1/6W J 12k Ω	RCX6JATZ0123
R602⚠		CEMENT RES. 5W K 1.2 Ω or	RW051R2DP005
⚠		CEMENT RESISTOR 5W K 1.2 Ω or	RW051R2PG001
⚠		CEMENT RESISTOR 5W J 1.2 Ω	RW051R2Y4001
R603		METAL OXIDE FILM RES. 2W J 0.39 Ω or	RN02R39ZU001
		METAL OXIDE FILM RES. 2W J 0.39 Ω	RN02R39DP004
R604		CARBON RES. 1/4W J 1.2M Ω or	RCX4JATZ0125
		CARBON RES. 1/6W J 1.2M Ω	RCX6JATZ0125
R605		CARBON RES. 1/4W J 1.2M Ω or	RCX4JATZ0125
		CARBON RES. 1/6W J 1.2M Ω	RCX6JATZ0125
R606		CARBON RES. 1/4W J 180 Ω or	RCX4JATZ0181
		CARBON RES. 1/6W J 180 Ω	RCX6JATZ0181
R607		CARBON RES. 1/4W J 180 Ω or	RCX4JATZ0181
		CARBON RES. 1/6W J 180 Ω	RCX6JATZ0181
R608		CARBON RES. 1/4W J 150k Ω or	RCX4JATZ0154
		CARBON RES. 1/6W J 150k Ω	RCX6JATZ0154
R610		CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
		CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R613		CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
		CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R614		CARBON RES. 1/4W J 1.5k Ω or	RCX4JATZ0152
		CARBON RES. 1/6W J 1.5k Ω	RCX6JATZ0152
R616		CARBON RES. 1/4W 2.2 Ω J or	RCX4JATZ02R2
		CARBON RES. 1/6W J 2.2 Ω	RCX6JATZ02R2
R617		CARBON RES. 1/4W J 180 Ω or	RCX4JATZ0181
		CARBON RES. 1/6W J 180 Ω	RCX6JATZ0181
R618		CARBON RES. 1/4W J 330 Ω or	RCX4JATZ0331
		CARBON RES. 1/6W J 330 Ω	RCX6JATZ0331
R619		CARBON RES. 1/4W J 330 Ω or	RCX4JATZ0331
		CARBON RES. 1/6W J 330 Ω	RCX6JATZ0331
R620		CEMENT RES. 5W J 3.9k Ω or	RW05392DP008
		CEMENT RES. 5W 3.9k Ω H=25MM or	RW05392PG004
		CEMENT RES. 5W J 3.9k Ω	RW05392Y4004
R621		CARBON RES. 1/4W J 15k Ω or	RCX4JATZ0153
		CARBON RES. 1/6W J 15k Ω	RCX6JATZ0153
R622		CARBON RES. 1/4W J 15k Ω or	RCX4JATZ0153
		CARBON RES. 1/6W J 15k Ω	RCX6JATZ0153
R623		CARBON RES. 1/4W J 33k Ω or	RCX4JATZ0333
		CARBON RES. 1/6W J 33k Ω	RCX6JATZ0333
R624		CARBON RES. 1/4W J 39k Ω or	RCX4JATZ0393
		CARBON RES. 1/6W J 39k Ω	RCX6JATZ0393
R625		CARBON RES. 1/4W J 47k Ω or	RCX4JATZ0473
		CARBON RES. 1/6W J 47k Ω	RCX6JATZ0473
R629		CARBON RES. 1/4W J 13k Ω or	RCX4JATZ0133
		CARBON RES. 1/6W J 13k Ω	RCX6JATZ0133
R630		CARBON RES. 1/4W J 13k Ω or	RCX4JATZ0133
		CARBON RES. 1/6W J 13k Ω	RCX6JATZ0133
R631		CARBON RES. 1/4W J 12k Ω or	RCX4JATZ0123
		CARBON RES. 1/6W J 12k Ω	RCX6JATZ0123

Ref. No.	Mark	Description	Part No.
R632		CARBON RES. 1/4W J 470 Ω or	RCX4JATZ0471
		CARBON RES. 1/6W J 470 Ω	RCX6JATZ0471
R633		CARBON RES. 1/4W J 5.6k Ω or	RCX4JATZ0562
		CARBON RES. 1/6W J 5.6k Ω	RCX6JATZ0562
R634		CARBON RES. 1/4W J 6.8k Ω or	RCX4JATZ0682
		CARBON RES. 1/6W J 6.8k Ω	RCX6JATZ0682
R635		CARBON RES. 1/4W J 10k Ω or	RCX4JATZ0103
		CARBON RES. 1/6W J 10k Ω	RCX6JATZ0103
R636		CARBON RES. 1/4W J 820 Ω or	RCX4JATZ0821
		CARBON RES. 1/6W J 820 Ω	RCX6JATZ0821
R639		METAL OXIDE FILM RES. 2W J 560 Ω or	RN02561ZU001
		METAL OXIDE FILM RES. 2W J 560 Ω	RN02561DP004
R640		CARBON RES. 1/4W J 56k Ω or	RCX4JATZ0563
		CARBON RES. 1/6W J 56k Ω	RCX6JATZ0563
R641		CARBON RES. 1/4W J 10k Ω or	RCX4JATZ0103
		CARBON RES. 1/6W J 10k Ω	RCX6JATZ0103
R642		CARBON RES. 1/4W J 8.2k Ω or	RCX4JATZ0822
		CARBON RES. 1/6W J 8.2k Ω	RCX6JATZ0822
R644		CARBON RES. 1/4W J 47k Ω or	RCX4JATZ0473
		CARBON RES. 1/6W J 47k Ω	RCX6JATZ0473
R646⚠		METAL OXIDE FILM RES. 1W J 56 Ω or	RN01560ZU001
⚠		METAL OXIDE FILM RES. 1W J 56 Ω	RN01560DP003
R647⚠		METAL OXIDE FILM RES. 1W J 56 Ω or	RN01560ZU001
⚠		METAL OXIDE FILM RES. 1W J 56 Ω	RN01560DP003
R648⚠		METAL OXIDE FILM RES. 1W J 8.2 Ω or	RN018R2ZU001
⚠		METAL OXIDE FILM RES. 1W J 8.2 Ω	RN018R2DP003
R649		CARBON RES. 1/4W J 10k Ω or	RCX4JATZ0103
		CARBON RES. 1/6W J 10k Ω	RCX6JATZ0103
R650⚠		CARBON RES. 1/4W J 33 Ω or	RCX4JATZ0330
⚠		CARBON RES. 1/6W J 33 Ω	RCX6JATZ0330
R651		CARBON RES. 1/4W J 560 Ω or	RCX4JATZ0561
		CARBON RES. 1/6W J 560 Ω	RCX6JATZ0561
R652⚠		CARBON RES. 1/4W J 560 Ω or	RCX4JATZ0561
⚠		CARBON RES. 1/6W J 560 Ω	RCX6JATZ0561
R653		CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
		CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R654		METAL OXIDE FILM RES. 1W J 6.8 Ω or	RN016R8ZU001
		METAL OXIDE FILM RES. 1W J 6.8 Ω	RN016R8DP003
R655		CARBON RES. 1/4W J 1.8k Ω or	RCX4JATZ0182
		CARBON RES. 1/6W J 1.8k Ω	RCX6JATZ0182
R656⚠		METAL OXIDE FILM RES. 2W J 10 Ω or	RN02100ZU001
⚠		METAL OXIDE FILM RES. 2W J 10 Ω	RN02100DP004
R659		CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
		CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R660		PCB JUMPER D0.6-P5.0	JW5.0T
R662		CARBON RES. 1/4W J 33 Ω or	RCX4JATZ0330
		CARBON RES. 1/6W J 33 Ω	RCX6JATZ0330
R701		CARBON RES. 1/4W J 150 Ω or	RCX4JATZ0151
		CARBON RES. 1/6W J 150 Ω	RCX6JATZ0151
R801⚠		METAL OXIDE FILM RES. 1W J 12 Ω or	RN01120ZU001
⚠		FIXED METAL OXIDE FILM RES. 1W J 12 Ω	RN01JZPZ0120
R802		CARBON RES. 1/4W J 4.7k Ω or	RCX4JATZ0472
		CARBON RES. 1/6W J 4.7k Ω	RCX6JATZ0472
R803		CARBON RES. 1/4W J 2.2k Ω or	RCX4JATZ0222
		CARBON RES. 1/6W J 2.2k Ω	RCX6JATZ0222
R804		CARBON RES. 1/4W J 3.9k Ω or	RCX4JATZ0392
		CARBON RES. 1/6W J 3.9k Ω	RCX6JATZ0392
R805		CARBON RES. 1/4W J 12k Ω or	RCX4JATZ0123
		CARBON RES. 1/6W J 12k Ω	RCX6JATZ0123
R806	A,B,C,D	CARBON RES. 1/4W J 47 Ω or	RCX4JATZ0470

Ref. No.	Mark	Description	Part No.
	A,B,C,D	CARBON RES. 1/6W J 47 Ω	RCX6JATZ0470
R807	A,B,C,D	CARBON RES. 1/4W J 47 Ω or	RCX4JATZ0470
	A,B,C,D	CARBON RES. 1/6W J 47 Ω	RCX6JATZ0470
R811	E	CARBON RES. 1/4W J 47 Ω or	RCX4JATZ0470
	E	CARBON RES. 1/6W J 47 Ω	RCX6JATZ0470
R812	E	CARBON RES. 1/4W J 47 Ω or	RCX4JATZ0470
	E	CARBON RES. 1/6W J 47 Ω	RCX6JATZ0470
R813	E	CARBON RES. 1/4W J 47 Ω or	RCX4JATZ0470
	E	CARBON RES. 1/6W J 47 Ω	RCX6JATZ0470
R814	E	CARBON RES. 1/4W J 47 Ω or	RCX4JATZ0470
	E	CARBON RES. 1/6W J 47 Ω	RCX6JATZ0470
R851		CARBON RES. 1/4W J 22k Ω or	RCX4JATZ0223
		CARBON RES. 1/6W J 22k Ω	RCX6JATZ0223
R852		CARBON RES. 1/4W J 3.3k Ω or	RCX4JATZ0332
		CARBON RES. 1/6W J 3.3k Ω	RCX6JATZ0332
R853		CARBON RES. 1/4W J 2.2M Ω or	RCX4JATZ0225
		CARBON RES. 1/6W J 2.2M Ω	RCX6JATZ0225
R856		CARBON RES. 1/4W J 22k Ω or	RCX4JATZ0223
		CARBON RES. 1/6W J 22k Ω	RCX6JATZ0223
R857		CARBON RES. 1/4W J 3.3k Ω or	RCX4JATZ0332
		CARBON RES. 1/6W J 3.3k Ω	RCX6JATZ0332
R858		CARBON RES. 1/4W J 6.8k Ω or	RCX4JATZ0682
		CARBON RES. 1/6W J 6.8k Ω	RCX6JATZ0682
R859		CARBON RES. 1/4W J 4.7k Ω or	RCX4JATZ0472
		CARBON RES. 1/6W J 4.7k Ω	RCX6JATZ0472
R861		CARBON RES. 1/4W J 6.8k Ω or	RCX4JATZ0682
		CARBON RES. 1/6W J 6.8k Ω	RCX6JATZ0682
R862		CARBON RES. 1/4W J 2.7k Ω or	RCX4JATZ0272
		CARBON RES. 1/6W J 2.7k Ω	RCX6JATZ0272
R863		CARBON RES. 1/4W J 10k Ω or	RCX4JATZ0103
		CARBON RES. 1/6W J 10k Ω	RCX6JATZ0103
R864		CARBON RES. 1/4W J 8.2k Ω or	RCX4JATZ0822
		CARBON RES. 1/6W J 8.2k Ω	RCX6JATZ0822
R865		CARBON RES. 1/4W J 12k Ω or	RCX4JATZ0123
		CARBON RES. 1/6W J 12k Ω	RCX6JATZ0123
R866		CARBON RES. 1/4W J 330k Ω or	RCX4JATZ0334
		CARBON RES. 1/6W J 330k Ω	RCX6JATZ0334
R867		CARBON RES. 1/4W J 150 Ω or	RCX4JATZ0151
		CARBON RES. 1/6W J 150 Ω	RCX6JATZ0151
R868		CARBON RES. 1/4W J 22k Ω or	RCX4JATZ0223
		CARBON RES. 1/6W J 22k Ω	RCX6JATZ0223
R869		CARBON RES. 1/4W J 820 Ω or	RCX4JATZ0821
		CARBON RES. 1/6W J 820 Ω	RCX6JATZ0821
R871		CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
		CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R872		CARBON RES. 1/4W J 22k Ω or	RCX4JATZ0223
		CARBON RES. 1/6W J 22k Ω	RCX6JATZ0223
R873		CARBON RES. 1/4W J 47k Ω or	RCX4JATZ0473
		CARBON RES. 1/6W J 47k Ω	RCX6JATZ0473
R874		CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
		CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R875		CARBON RES. 1/4W J 2.2k Ω or	RCX4JATZ0222
		CARBON RES. 1/6W J 2.2k Ω	RCX6JATZ0222
R876		CARBON RES. 1/4W J 2.2k Ω or	RCX4JATZ0222
		CARBON RES. 1/6W J 2.2k Ω	RCX6JATZ0222
R877		CARBON RES. 1/4W J 820 Ω or	RCX4JATZ0821
		CARBON RES. 1/6W J 820 Ω	RCX6JATZ0821
R878		CARBON RES. 1/4W J 10k Ω or	RCX4JATZ0103
		CARBON RES. 1/6W J 10k Ω	RCX6JATZ0103

Ref. No.	Mark	Description	Part No.
R976		METAL OXIDE FILM RES. 1W J 47 Ω or	RN01470ZU001
		METAL OXIDE FILM RES. 1W J 47 Ω	RN01470DP003
R977		CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
		CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R978		CARBON RES. 1/4W J 6.8k Ω or	RCX4JATZ0682
		CARBON RES. 1/6W J 6.8k Ω	RCX6JATZ0682
R979		CARBON RES. 1/4W J 22k Ω or	RCX4JATZ0223
		CARBON RES. 1/6W J 22k Ω	RCX6JATZ0223
R980		CARBON RES. 1/4W J 6.8k Ω or	RCX4JATZ0682
		CARBON RES. 1/6W J 6.8k Ω	RCX6JATZ0682
R981		METAL OXIDE FILM RES. 1W J 1.2 Ω or	RN011R2ZU001
		METAL OXIDE FILM RES. 1W J 1.2 Ω	RN011R2DP003
R992		CARBON RES. 1/4W J 47k Ω or	RCX4JATZ0473
		CARBON RES. 1/6W J 47k Ω	RCX6JATZ0473
RS201		REMOCON RECEIVE UNIT MIM-93M8DKL or	USESJRSUNT02
		REMOCON RECEIVE UNIT PIC-37042SR or	USESJRSKK034
		REMOCON RECEIVE UNIT PIC-26042SR-2	USESJRSKK032
SWITCHES			
SW201		TACT SWITCH SKQSAB or	SST0101AL038
		TACT SWITCH SKHHAM or	SST0101AL029
		TACT SWITCH KSM0612B	SST0101HH003
SW202		TACT SWITCH SKQSAB or	SST0101AL038
		TACT SWITCH SKHHAM or	SST0101AL029
		TACT SWITCH KSM0612B	SST0101HH003
SW203		TACT SWITCH SKQSAB or	SST0101AL038
		TACT SWITCH SKHHAM or	SST0101AL029
		TACT SWITCH KSM0612B	SST0101HH003
SW204		TACT SWITCH SKQSAB or	SST0101AL038
		TACT SWITCH SKHHAM or	SST0101AL029
		TACT SWITCH KSM0612B	SST0101HH003
SW205		TACT SWITCH SKQSAB or	SST0101AL038
		TACT SWITCH SKHHAM or	SST0101AL029
		TACT SWITCH KSM0612B	SST0101HH003
SW206		TACT SWITCH SKQSAB or	SST0101AL038
		TACT SWITCH SKHHAM or	SST0101AL029
		TACT SWITCH KSM0612B	SST0101HH003
SW207		TACT SWITCH SKQSAB or	SST0101AL038
		TACT SWITCH SKHHAM or	SST0101AL029
		TACT SWITCH KSM0612B	SST0101HH003
SW208		TACT SWITCH SKQSAB or	SST0101AL038
		TACT SWITCH SKHHAM or	SST0101AL029
		TACT SWITCH KSM0612B	SST0101HH003
SW209		TACT SWITCH SKQSAB or	SST0101AL038
		TACT SWITCH SKHHAM or	SST0101AL029
		TACT SWITCH KSM0612B	SST0101HH003
SW210		TACT SWITCH SKQSAB or	SST0101AL038
		TACT SWITCH SKHHAM or	SST0101AL029
		TACT SWITCH KSM0612B	SST0101HH003
SW211		LEAF SWITCH LSA-1142AU or	SSC0101KB013
		LEAF SWITCH MXS00052MPP0 or	SSC0101MCE01
		LEAF SWITCH MXS00981MPP0	SSC0101MCE02
SW212		ROTARY MODE SWITCH SSS-43MD or	SSR0106KB001
		ROTARY MODE SWITCH R8100212	SSR0106U3001
MISCELLANEOUS			
BC601		BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC602		BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC603		BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC604		BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC605		PCB JUMPER D0.6-P5.0	JW5.0T
CF301		CERAMIC TRAP 4.5MHz or	FBE455PMR003

Ref. No.	Mark	Description	Part No.
		4.5M TRAP XT4.5MB2	FBE455PLN001
CF302		CERAMIC FILTER SFSRA4M50CF00-B0 or	FBB455PMR004
		4.5M FILTER LTH4.5MCB	FBB455PLN001
CL201		FMN CONNECTOR, TOP 12P 12FMN-BTRK	JCFNG12JG002
F601⚠		FUSE 4.00A/125V or	PAGU20CAG402
⚠		FUSE 51MS040L or	PAFC20CHV402
⚠		FUSE 4A/125V 237 TYPE or	PAGJ20CAG402
⚠		FUSE STC4A125V U/CT	PAGE20CW3402
FH601		FUSE HOLDER MSF-015 or	XH01Z00LY001
		FUSE HOLDER FH-V-03078	XH01Z00DK001
FH602		FUSE HOLDER MSF-015 or	XH01Z00LY001
		FUSE HOLDER FH-V-03078	XH01Z00DK001
JK601⚠		AC INLET CCT9302-0201M or	JTDC0P0SR001
⚠		AC INLET HSC0555-010010 or	JTDC0P0HD001
⚠		AC INLET YKE31-0120	JTDC0P0JC001
JK701		RCA JACK 1P AV-8.4-9Y	JXRL010RP010
JK702		RCA JACK 1P AV-8.4-9W	JXRL010RP011
JK801	A,B,C,D	EARPHONE JACK EX341BLB-1	JYSL030EXC01
JK802	E	EARPHONE JACK HSJ1002-01-1020	JXSL020HD005
PS601⚠		THERMISTOR ZPB45BL7R0A	QNZZ45BL7R0A
SA601⚠		SURGE ABSORBER JVR-07N471K or	NVQZVR07N471
⚠		SURGE ABSORBER CNR-10D471K or	NVQZR10D471K
⚠		SURGE ABSORBER CNR-07D471K or	NVQZR07D471K
⚠		SURGE ABSORBER PVR-07D471KB	NVQZ07D471KB
SF001	A,B,C,D	SAW FILTER SAFGM45M7VHGZM0B03	FBB456PMR007
SF001	E	SAW FILTER SAFGP45M7VHEZM0B03	FBB456PMR005
SG601⚠		GAP. FNR-G3.10D	FAZ000LD6005
T601⚠		SWITCHING TRANS AC K1J2K	LTT00CPKT092
TB3		HEAD SHIELD(NTSC) T5300UA	0EM301560
TB9		9V POW HEAT SINK PGH T4300UA	0EM406811
TB21		BUSH, LED(F) H3700UD	0VM409508
TL2		SCREW, B-TIGHT M3X8 BIND HEAD+	GBMB3080
TP001		PCB JUMPER D0.6-P10.0	JW10.0T
TP201		PCB JUMPER D0.6-P15.0	JW15.0T
TP301		PCB JUMPER D0.6-P10.0	JW10.0T
TP302		PCB JUMPER D0.6-P20.0	JW20.0T
TP401		PCB JUMPER D0.6-P15.0	JW15.0T
TP402		PCB JUMPER D0.6-P15.0	JW15.0T
TP403		PCB JUMPER D0.6-P15.0	JW15.0T
TP601		PCB JUMPER D0.6-P10.0	JW10.0T
TP602		PCB JUMPER D0.6-P10.0	JW10.0T
TU001	A,B,C,D	TUNER B8095AP or	UTUNNTUSP018
	A,B,C,D	TUNER ENV56DB3G3 or	UTUNNTUMS009
	A,B,C,D	TUNER UNIT TEDH9-309A	UTUNNTUAL031
TU001	E	TUNER UNIT TEDH-932A	UTUNNTUAL029
VR601		CARBON P.O.T. 10k Ω B or	VRCB103KA011
		CARBON P.O.T. 10k Ω B	VRCB103HH014
X201		X'TAL 32.768kHz(20PPM) or	FXC323LJNY01
		X'TAL 32.768kHz(20PPM) or	FXC323LCT001
		X'TAL 32.768kHz(20PPM)	FXC323LDS002
X202		X'TAL HC-49/U 10.6MHz or	FXD106LLN001
		X'TAL AT49-10.6 or	FXD106LDS002
		X'TAL :10.6MHz S8562	FXD106LCT001
X301		X'TAL 3.579545 MHz or	FXD355LLN003
		X'TAL 3.579545MHz(30PPM)	FXD355LCHE01
X401		X'TAL 3.579545MHz(20PPM) or	FXC355LJNY01
		X'TAL 3.579545MHz(20PPM) or	FXC355LLN003
		X'TAL 3.579545MHz(20PPM) or	FXC355LDS001
		X'TAL 3.579545MHz	FXC355LLN001

SENSOR CBA

Ref.No.	Description	Part No.
	SENSOR CBA Consists of the followings	0ESA04524
Q201	PHOTO TRANSISTOR PT204-6B-12 or	NPWZT2046B12
	PHOTO TRANSISTOR MID-32A22	NPWZM1D32A22
Q202	PHOTO TRANSISTOR PT204-6B-12 or	NPWZT2046B12
	PHOTO TRANSISTOR MID-32A22	NPWZM1D32A22

POWER CBA

Ref.No.	Description	Part No.
	POWER CBA (HV/DC POWER SUPPLY CBA + CRT CBA + JUNCTION A CBA + JUNCTION B CBA) Consists of the followings	Z1109PS1
	HV/DC POWER SUPPLY CBA	---------
	CRT CBA	---------
	JUNCTION A CBA	---------
	JUNCTION B CBA	---------

HV/DC POWER SUPPLY CBA

Ref.No.	Description	Part No.
	HV/DC POWER SUPPLY CBA Consists of the followings	---------
	CAPACITORS	
C552	MYLAR CAP. 0.22μF/50V J or	CMA1JJS00224
	FILM CAP.(P) 0.22μF/50V J	CA1J224MS029
C553	ELECTROLYTIC CAP. 2.2μF/50V M LL or	CE1JMASLL2R2
	ELECTROLYTIC CAP. 2.2μF/50V LL	CE1JMASLH2R2
C555	ELECTROLYTIC CAP. 47μF/35V M or	CE1GMASDL470
	ELECTROLYTIC CAP. 47μF/35V M	CE1GMASTL470
C556	ELECTROLYTIC CAP. 1000μF/25V M or	CE1EMZPDL102
	ELECTROLYTIC CAP. 1000μF/25V M	CE1EMZPTL102
C558	CERAMIC CAP.(AX) B K 0.01μF/50V	CA1J103TU011
C559	ELECTROLYTIC CAP. 330μF/35V M or	CE1GMZPDL331
	ELECTROLYTIC CAP. 330μF/35V M	CE1GMZPTL331
C560	FILM CAP.(P) 0.0068μF/50V J or	CMA1JJS00682
	FILM CAP.(P) 0.0068μF/50V J	CA1J682MS029
C563	PCB JUMPER D0.6-P5.0	JW5.0T
C572⚠	P.P. CAP 0.22μF/200V J or	CA2D224VC012
⚠	PP CAP. 0.22μF/200V J	CT2E224MS041
C574	ELECTROLYTIC CAP. 4.7μF/250V M or	CE2EMASDL4R7
	ELECTROLYTIC CAP. 4.7μF/250V M	CE2EMASTL4R7
C577	FILM CAP.(P) 0.01μF/50V J or	CMA1JJS00103
	FILM CAP.(P) 0.01μF/50V J	CA1J103MS029
C578	ELECTROLYTIC CAP. 47μF/35V M or	CE1GMASDL470
	ELECTROLYTIC CAP. 47μF/35V M	CE1GMASTL470
C580⚠	P.P.CAP 0.0068μF/1.6KV J or	CA3C682VC011
⚠	PP CAP. 0.0068μF/1.6KV J or	CT3C682MS039
⚠	PP CAP. 0.0068μF/1.6KV J	CBH3CJQ00682
C581⚠	CERAMIC CAP. BN 820pF/2KV or	CCD3DKA0B821
⚠	CERAMIC CAP. LB 820pF/2KV or	CA3D821KG004
⚠	CERAMIC CAP. 820pF/2KV	CA3D821PAN04

Ref.No.	Description	Part No.
C584⚠	ELECTROLYTIC CAP. 1µF/160V M or	CE2CMASDL1R0
⚠	ELECTROLYTIC CAP. 1µF/160V M	CE2CMASTL010
C585	CERAMIC CAP. B K 100pF/1KV or	CCD3AKD0B101
	CERAMIC CAP. B K 100pF/1KV or	CA3A101MR028
	CERAMIC CAP. B K 100pF/1KV	CCD3AKP0B101
C591⚠	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
⚠	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL010
⚠	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASTL010
C592⚠	ELECTROLYTIC CAP. 47µF/35V M or	CE1GMASDL470
⚠	ELECTROLYTIC CAP. 47µF/35V M	CE1GMASTL470
C594	ELECTROLYTIC CAP. 100µF/160V M or	CE2CMZPDL101
	ELECTROLYTIC CAP. 100µF/160V M	CE2CMZZTL101
C1930	CERAMIC CAP.(AX) CH J 330pF/50V	CA1J331TU008
C1931	ELECTROLYTIC CAP. 47µF/25V M or	CE1EMASDL470
	ELECTROLYTIC CAP. 47µF/25V M	CE1EMASTL470
C1932	CERAMIC CAP.(AX) B K 0.0047µF/50V	CA1J472TU011
C1933	ELECTROLYTIC CAP. 10µF/16V M or	CE1CMASDL100
	ELECTROLYTIC CAP. 10µF/16V M	CE1CMASTL100
C1951	ELECTROLYTIC CAP. 1000µF/25V M or	CE1EMZPDL102
	ELECTROLYTIC CAP. 1000µF/25V M	CE1EMZPTL102
C1952	ELECTROLYTIC CAP. 3300µF/25V(PJ) or	CA1E332NC052
	ELECTROLYTIC CAP. 3300µF/25V M(KC)	CA1E332EA041
C1957	CERAMIC CAP. B K 560pF/1KV or	CCD3AKD0B561
	CERAMIC CAP. B K 560pF/1KV	CCD3AKP0B561
C1958	CERAMIC CAP. B K 560pF/1KV or	CCD3AKD0B561
	CERAMIC CAP. B K 560pF/1KV	CCD3AKP0B561
C1959	ELECTROLYTIC CAP. 100µF/160V M or	CE2CMZPDL101
	ELECTROLYTIC CAP. 100µF/160V M	CE2CMZZTL101
C1960	CERAMIC CAP. B K 1500pF/1KV or	CCD3AKD0B152
	CERAMIC CAP. B K 1500pF/1KV or	CA3A152MR028
	CERAMIC CAP. B K 1500pF/1KV	CCD3AKP0B152
C1961	ELECTROLYTIC CAP. 220µF/35V M or	CE1GMASDL221
	ELECTROLYTIC CAP. 220µF/35V M	CE1GMASTL221
C1962	FILM CAP.(P) 0.0082µF/50V J or	CMA1JJS00822
	FILM CAP.(P) 0.0082µF/50V J	CA1J822MS029
C1963	CERAMIC CAP. YV Z 0.01µF/50V or	CCD1JZSYV103
	CERAMIC CAP. F Z 0.01µF/50V	CCD1JZS0F103
C1966	CERAMIC CAP.(AX) B K 0.1µF/50V	CA1J104TU011
CONNECTORS		
CN571	CONNECTOR BASE, 5P TV-50P-05-V3 or	J3TVC05TG002
	CONNECTOR BASE, 5P RTB-1.5-5P	J3RTC05JG001
DIODES		
D552	DIODE 1N5397-B or	NDLZ001N5397
	RECTIFIER DIODE ERB12-06	QDQZ0ERB1206
D571⚠	DIODE FR154 or	NDLZ000FR154
⚠	FAST RECOVERY DIODE ERB44-02	QDPZ0ERB4402
D572⚠	DIODE FR104-B or	NDLZ000FR104
⚠	RECTIFIER DIODE 10ELS2 or	QDQZ0010ELS2
⚠	RECTIFIER DIODE ERA22-02	QDPZ0ERA2202
D584⚠	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠	SWITCHING DIODE 1N4148	NDTZ001N4148
D585	ZENER DIODE MTZJT-775.1B or	QDTB0MTZJ5R1
	ZENER DIODE DZ-5.1BSBT265	NDTB0DZ5R1BS
D591⚠	ZENER DIODE MTZJT-7736B or	QDTB00MTZJ36
⚠	ZENER DIODE DZ-36BSBT265	NDTB00DZ36BS
D595	ZENER DIODE MTZJT-7718B or	QDTB00MTZJ18
	ZENER DIODE DZ-18BSBT265	NDTB00DZ18BS
D596⚠	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠	SWITCHING DIODE 1N4148	NDTZ001N4148
D597⚠	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133

Ref.No.	Description	Part No.
⚠	SWITCHING DIODE 1N4148	NDTZ001N4148
D598⚠	DIODE FR104-B or	NDLZ000FR104
⚠	RECTIFIER DIODE 10ELS2 or	QDQZ0010ELS2
⚠	RECTIFIER DIODE ERA22-02	QDPZ0ERA2202
D1930	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D1952⚠	DIODE 1ZC18 or	QDQZ0001ZC18
⚠	ZENER DIODE RD18F	QDQZ000RD18F
D1955⚠	FAST RECOVERY DIODE 20NFA60 or	QDAZ020NFA60
⚠	FAST RECOVERY DIODE ERD38-06	QDQZ0ERD3806
D1956	DIODE FR154 or	NDLZ000FR154
	FAST RECOVERY DIODE ERB44-02	QDPZ0ERB4402
D1957	ZENER DIODE MTZJT-7712A or	QDTA00MTZJ12
	ZENER DIODE DZ-12BSAT265	NDTA00DZ12BS
D1958	SCHOTTKY BARRIER DIODE SB140	NDQZ000SB140
D1959	SCHOTTKY BARRIER DIODE SB140	NDQZ000SB140
D1960	SCHOTTKY BARRIER DIODE SB140	NDQZ000SB140
ICS		
IC551⚠	VERTICAL OUTPUT IC AN5522 or	QSZBA0SMS002
⚠	VERTICAL OUTPUT IC LA78040A	QSBBA0SSY003
IC1951	IC:SWITCHING REGURATOR M62212FP	QSZBA0TMB004
COILS		
L505	CHOKE COIL 47µH-K	LLBD00PKV007
L506	CHOKE COIL 47µH-K	LLBD00PKV007
TRANSISTORS		
Q571⚠	TRANSISTOR 2SD2627LS-FEC-YB11	QQZZ02SD2627
Q572	TRANSISTOR 2SC1627Y-TPE2	QQSY02SC1627
Q591⚠	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
⚠	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
⚠	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
⚠	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
⚠	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
⚠	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1930	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
	TRANSISTOR 2SC3331(U) or	QSC3331UNPAA
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1931	TRANSISTOR KTC3199(GR)	NQS10KTC3199
Q1932	TRANSISTOR KTA1267(GR)	NQS10KTA1267
Q1933⚠	MOS FET 2SK2232 or	QF5Z02SK2232
⚠	MOS FET FS30KMJ-06	QFZZ0FS30KMJ
Q1951	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1952	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1953⚠	TRANSISTOR 2SA1931 or	QQZZ02SA1931
⚠	TRANSISTOR 2SA1469(R)	QQ9R02SA1469
Q1954	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199

Ref.No.	Description	Part No.
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1955	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1956	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
	RESISTORS	
R544	CARBON RES. 1/4W J 10k Ω or	RCX4JATZ0103
	CARBON RES. 1/6W J 10k Ω	RCX6JATZ0103
R551	CARBON RES. 1/4W J 8.2k Ω or	RCX4JATZ0822
	CARBON RES. 1/6W J 8.2k Ω	RCX6JATZ0822
R552	CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R556	CARBON RES. 1/4W J 4.7 Ω	RCX4JATZ04R7
R557	CARBON RES. 1/4W J 560 Ω or	RCX4JATZ0561
	CARBON RES. 1/6W J 560 Ω	RCX6JATZ0561
R558	CARBON RES. 1/4W J 18k Ω or	RCX4JATZ0183
	CARBON RES. 1/6W J 18k Ω	RCX6JATZ0183
R559	CARBON RES. 1/4W J 2.7k Ω or	RCX4JATZ0272
	CARBON RES. 1/6W J 2.7k Ω	RCX6JATZ0272
R560	CARBON RES. 1/4W J 3.9k Ω or	RCX4JATZ0392
	CARBON RES. 1/6W J 3.9k Ω	RCX6JATZ0392
R561	CARBON RES. 1/4W J 10k Ω or	RCX4JATZ0103
	CARBON RES. 1/6W J 10k Ω	RCX6JATZ0103
R562	CARBON RES. 1/4W J 4.7 Ω	RCX4JATZ04R7
R563	CARBON RES. 1/4W J 4.7 Ω	RCX4JATZ04R7
R565⚠	CARBON RES. 1/4W J 3.9 Ω or	RCX4JATZ03R9
⚠	CARBON RES. 1/6W J 3.9 Ω	RCX6JATZ03R9
R566⚠	CARBON RES. 1/4W J 3.9 Ω or	RCX4JATZ03R9
⚠	CARBON RES. 1/6W J 3.9 Ω	RCX6JATZ03R9
R568	CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R570⚠	CARBON RES. 1/4W J 3.9 Ω or	RCX4JATZ03R9
⚠	CARBON RES. 1/6W J 3.9 Ω	RCX6JATZ03R9
R573	CARBON RES. 1/4W J 470 Ω or	RCX4JATZ0471
	CARBON RES. 1/6W J 470 Ω	RCX6JATZ0471
R574⚠	METAL OXIDE FILM RES. 2W J 1k Ω or	RN02102ZU001
⚠	METAL OXIDE FILM RES. 2W J 1k Ω	RN02102DP004
R575⚠	METAL OXIDE FILM RES. 2W J 1k Ω or	RN02102ZU001
⚠	METAL OXIDE FILM RES. 2W J 1k Ω	RN02102DP004
R576	CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
	CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R577	CARBON RES. 1/4W J 560 Ω or	RCX4JATZ0561
	CARBON RES. 1/6W J 560 Ω	RCX6JATZ0561
R578	CARBON RES. 1/4W J 3.9 Ω or	RCX4JATZ03R9
	CARBON RES. 1/6W J 3.9 Ω	RCX6JATZ03R9
R580	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R583	METAL OXIDE FILM RES. 2W J 5.6 Ω or	RN025R6ZU001
	METAL OXIDE FILM RES. 2W J 5.6 Ω	RN025R6DP004
R584⚠	CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
⚠	CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R585	CARBON RES. 1/4W J 8.2k Ω or	RCX4JATZ0822
	CARBON RES. 1/6W J 8.2k Ω	RCX6JATZ0822
R587⚠	CARBON RES. 1/4W J 220k Ω or	RCX4JATZ0224

Ref.No.	Description	Part No.
⚠	CARBON RES. 1/6W J 220k Ω	RCX6JATZ0224
R588	CARBON RES. 1/4W J 150k Ω or	RCX4JATZ0154
	CARBON RES. 1/6W J 150k Ω	RCX6JATZ0154
R589	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R590	CARBON RES. 1/4W J 47 Ω or	RCX4JATZ0470
	CARBON RES. 1/6W J 47 Ω	RCX6JATZ0470
R591⚠	CARBON RES. 1/4W J 33k Ω or	RCX4JATZ0333
⚠	CARBON RES. 1/6W J 33k Ω	RCX6JATZ0333
R592⚠	CARBON RES. 1/4W J 180k Ω or	RCX4JATZ0184
⚠	CARBON RES. 1/6W J 180k Ω	RCX6JATZ0184
R593⚠	CARBON RES. 1/4W J 68k Ω or	RCX4JATZ0683
⚠	CARBON RES. 1/6W J 68k Ω	RCX6JATZ0683
R594⚠	CARBON RES. 1/4W J 68k Ω or	RCX4JATZ0683
⚠	CARBON RES. 1/6W J 68k Ω	RCX6JATZ0683
R596	CARBON RES. 1/4W J 2.2k Ω or	RCX4JATZ0222
	CARBON RES. 1/6W J 2.2k Ω	RCX6JATZ0222
R597⚠	CARBON RES. 1/4W J 6.8k Ω or	RCX4JATZ0682
⚠	CARBON RES. 1/6W J 6.8k Ω	RCX6JATZ0682
R598⚠	CARBON RES. 1/4W J 22k Ω or	RCX4JATZ0223
⚠	CARBON RES. 1/6W J 22k Ω	RCX6JATZ0223
R599⚠	CARBON RES. 1/4W J 5.6k Ω or	RCX4JATZ0562
⚠	CARBON RES. 1/6W J 5.6k Ω	RCX6JATZ0562
R1930	CARBON RES. 1/4W J 100k Ω or	RCX4JATZ0104
	CARBON RES. 1/6W J 100k Ω	RCX6JATZ0104
R1931	CARBON RES. 1/4W J 12k Ω or	RCX4JATZ0123
	CARBON RES. 1/6W J 12k Ω	RCX6JATZ0123
R1932⚠	CARBON RES. 1/4W J 390 Ω or	RCX4JATZ0391
⚠	CARBON RES. 1/6W J 390 Ω	RCX6JATZ0391
R1933	CARBON RES. 1/4W J 47 Ω or	RCX4JATZ0470
	CARBON RES. 1/6W J 47 Ω	RCX6JATZ0470
R1934	CARBON RES. 1/4W J 47 Ω or	RCX4JATZ0470
	CARBON RES. 1/6W J 47 Ω	RCX6JATZ0470
R1935	CARBON RES. 1/4W J 390 Ω or	RCX4JATZ0391
	CARBON RES. 1/6W J 390 Ω	RCX6JATZ0391
R1936	CARBON RES. 1/4W J 4.7k Ω or	RCX4JATZ0472
	CARBON RES. 1/6W J 4.7k Ω	RCX6JATZ0472
R1937	CARBON RES. 1/4W J 15k Ω or	RCX4JATZ0153
	CARBON RES. 1/6W J 15k Ω	RCX6JATZ0153
R1938	CARBON RES. 1/4W J 18k Ω or	RCX4JATZ0183
	CARBON RES. 1/6W J 18k Ω	RCX6JATZ0183
R1939	CARBON RES. 1/4W J 5.6 Ω or	RCX4JATZ05R6
	CARBON RES. 1/6W J 5.6 Ω	RCX6JATZ05R6
R1940	CARBON RES. 1/4W J 680k Ω or	RCX4JATZ0684
	CARBON RES. 1/6W J 680k Ω	RCX6JATZ0684
R1941	CARBON RES. 1/4W J 220k Ω or	RCX4JATZ0224
	CARBON RES. 1/6W J 220k Ω	RCX6JATZ0224
R1953⚠	CARBON RES. 1/4W J 39k Ω or	RCX4JATZ0393
⚠	CARBON RES. 1/6W J 39k Ω	RCX6JATZ0393
R1954	CARBON RES. 1/4W J 5.6k Ω or	RCX4JATZ0562
	CARBON RES. 1/6W J 5.6k Ω	RCX6JATZ0562
R1955	CARBON RES. 1/4W J 6.8k Ω or	RCX4JATZ0682
	CARBON RES. 1/6W J 6.8k Ω	RCX6JATZ0682
R1956	CARBON RES. 1/4W J 10k Ω or	RCX4JATZ0103
	CARBON RES. 1/6W J 10k Ω	RCX6JATZ0103
R1957	METAL OXIDE FILM RES. 2W J 68 Ω or	RN02680ZU001
	METAL OXIDE FILM RES. 2W J 68 Ω	RN02680DP004
R1958	CARBON RES. 1/4W J 47k Ω or	RCX4JATZ0473
	CARBON RES. 1/6W J 47k Ω	RCX6JATZ0473
R1959	CARBON RES. 1/4W J 47k Ω or	RCX4JATZ0473
	CARBON RES. 1/6W J 47k Ω	RCX6JATZ0473

Ref.No.	Description	Part No.
R1960	CARBON RES. 1/4W J 12k Ω or	RCX4JATZ0123
	CARBON RES. 1/6W J 12k Ω	RCX6JATZ0123
R1961	CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
	CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R1962	CARBON RES. 1/4W J 100 Ω or	RCX4JATZ0101
	CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R1963	CARBON RES. 1/4W J 1.5k Ω or	RCX4JATZ0152
	CARBON RES. 1/6W J 1.5k Ω	RCX6JATZ0152
R1964	CARBON RES. 1/4W J 1k Ω or	RCX4JATZ0102
	CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R1965	CARBON RES. 1/4W J 22k Ω or	RCX4JATZ0223
	CARBON RES. 1/6W J 22k Ω	RCX6JATZ0223
R1966	CARBON RES. 1/4W J 47k Ω or	RCX4JATZ0473
	CARBON RES. 1/6W J 47k Ω	RCX6JATZ0473
R1967	CARBON RES. 1/4W J 1.2k Ω or	RCX4JATZ0122
	CARBON RES. 1/6W J 1.2k Ω	RCX6JATZ0122
R1968	CARBON RES. 1/4W J 47k Ω or	RCX4JATZ0473
	CARBON RES. 1/6W J 47k Ω	RCX6JATZ0473
R1969	CARBON RES. 1/4W J 47 Ω or	RCX4JATZ0470
	CARBON RES. 1/6W J 47 Ω	RCX6JATZ0470
R1970	CARBON RES. 1/4W J 47 Ω or	RCX4JATZ0470
	CARBON RES. 1/6W J 47 Ω	RCX6JATZ0470
R1971	CARBON RES. 1/4W J 47 Ω or	RCX4JATZ0470
	CARBON RES. 1/6W J 47 Ω	RCX6JATZ0470
R1972	CARBON RES. 1/4W J 47 Ω or	RCX4JATZ0470
	CARBON RES. 1/6W J 47 Ω	RCX6JATZ0470
R1973	CARBON RES. 1/4W J 5.6k Ω or	RCX4JATZ0562
	CARBON RES. 1/6W J 5.6k Ω	RCX6JATZ0562
R1974⚠	CEMENT RES. 5W K 4.7 Ω or	RW054R7DP005
⚠	CEMENT RES. 5W K 4.7 Ω or	RW054R7PG001
⚠	CEMENT RES. 5W J 4.7 Ω	RW054R7Y4001
	MISCELLANEOUS	
BC571	BEAD INDUCTORS FBA04HA600VB-00	LLBF00STU026
BC1951	BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC1952	BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC1954	BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
CL1951	#NAME?	WX1T4300-002
CL501A	LEAD WIRE 7P 250MM	WX1T4300-003
CL502A	LEAD WIRE 11P(7+4) 200MM	WX1T4300-001
F1951⚠	FUSE 6.00A/125V or	PAGU20CAG602
⚠	FUSE 51MS060L or	PAFC20CHV602
⚠	FUSE 6A/125V 237 TYPE	PAGJ20CAG602
FH1951	FUSE HOLDER MSF-015 or	XH01Z00LY001
	FUSE HOLDER FH-V-03078	XH01Z00DK001
FH1952	FUSE HOLDER MSF-015 or	XH01Z00LY001
	FUSE HOLDER FH-V-03078	XH01Z00DK001
JK1951	DC JACK	1630382
PB1	9V POWER PCB HOLDER T4300UA	0EM000599
PB3	BOTTOM SHIELD(DC) T4300UA	0EM301571
PB4	9V H/V HEAT SINK(PGC) T4300UA	0EM301558
PB5	HEAT SINK(EQ) T4300UA	0EM406810
PB9	FBT HOLDER T4300UA	0EM406929
PL1	SCREW, P-TIGHT 3X12 WASHER HEAD+	GCMP3120
PL2	SCREW, B-TIGHT M3X8 BIND HEAD+	GBMB3080
PL4	SCREW, B-TIGHT 3X10 WASHER HEAD	GCMB3100
PL7	SCREW TAPPING M4X14	DBU14140
PL8	SCREW, B-TIGHT M3X8 BIND HEAD+	GBMB3080
T571⚠	FLYBACK TRANS BSC21-2039S or	LTF00CPS2048
⚠	FLYBACK TRANS BSC25-0110	LTF00CPP1013
T572	H0RIZONTAL DRIVE TRANS LP2-004	LTH00CPA5004
T1951⚠	SWITCHING TRANS DC K1J2KDC	LTT00ZPKT091

Ref.No.	Description	Part No.
VR1951 ⚠	CARBON P.O.T. 20k Ω B or	VRCB203KA011
⚠	CARBON P.O.T. 20k Ω B	VRCB203HH014

CRT CBA

Ref.No.	Description	Part No.
	CRT CBA Consists of the followings	---------
	CAPACITORS	
C501	CERAMIC CAP.(AX) B K 330pF/50V	CCA1JKT0B331
C502	CERAMIC CAP.(AX) B K 330pF/50V	CCA1JKT0B331
C503	CERAMIC CAP.(AX) B K 330pF/50V	CCA1JKT0B331
C507	ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1μF/50V M or	CE1JMASDL010
	ELECTROLYTIC CAP. 1μF/50V M	CE1JMASTL010
C510	CERAMIC CAP. B K 1000pF/2KV or	CCD3DKP0B102
	CERAMIC CAP. B K 1000pF/2KV or	CA3D102MR030
	CERAMIC CAP. B K 1000pF/2KV	CCD3DKD0B102
	CONNECTORS	
CN501	PIN CONNECTOR 005P-5100 or	JTEA001TG001
	CONNECTOR PIN, 1P LV or	1700576
	CONNECTOR PIN, 1P RT-01N-2.3A	1730688
	TRANSISTORS	
Q501	TRANSISTOR 2SC2482 TPE6 or	QQSZ02SC2482
	TRANSISTOR 2SC3468(E)-AE or	QQSE02SC3468
	TRANSISTOR 2SC3468(D)-AE	QQSD02SC3468
Q502	TRANSISTOR 2SC2482 TPE6 or	QQSZ02SC2482
	TRANSISTOR 2SC3468(E)-AE or	QQSE02SC3468
	TRANSISTOR 2SC3468(D)-AE	QQSD02SC3468
Q503	TRANSISTOR 2SC2482 TPE6 or	QQSZ02SC2482
	TRANSISTOR 2SC3468(E)-AE or	QQSE02SC3468
	TRANSISTOR 2SC3468(D)-AE	QQSD02SC3468
	RESISTORS	
R501⚠	METAL OXIDE FILM RES. 1W J 15k Ω or	RN01153ZU001
⚠	METAL OXIDE FILM RES. 1W J 15k Ω	RN01153DP003
R502⚠	METAL OXIDE FILM RES. 1W J 15k Ω or	RN01153ZU001
⚠	METAL OXIDE FILM RES. 1W J 15k Ω	RN01153DP003
R503⚠	METAL OXIDE FILM RES. 1W J 15k Ω or	RN01153ZU001
⚠	METAL OXIDE FILM RES. 1W J 15k Ω	RN01153DP003
R504	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R505	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R506	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R507	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R508	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R511	CARBON RES. 1/4W J 150k Ω	RCX4JATZ0154
R512	CARBON RES. 1/4W J 150k Ω	RCX4JATZ0154
R513	CARBON RES. 1/4W J 150k Ω	RCX4JATZ0154
R514	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R516	CARBON RES. 1/4W J 15 Ω or	RCX4JATZ0150
	CARBON RES. 1/6W J 15 Ω	RCX6JATZ0150
R517	CARBON RES. 1/4W J 680 Ω or	RCX4JATZ0681
	CARBON RES. 1/6W J 680 Ω	RCX6JATZ0681
R518	CARBON RES. 1/4W J 15 Ω or	RCX4JATZ0150
	CARBON RES. 1/6W J 15 Ω	RCX6JATZ0150
R519	CARBON RES. 1/4W J 680 Ω or	RCX4JATZ0681
	CARBON RES. 1/6W J 680 Ω	RCX6JATZ0681
R520	CARBON RES. 1/4W J 15 Ω or	RCX4JATZ0150
	CARBON RES. 1/6W J 15 Ω	RCX6JATZ0150
R521	CARBON RES. 1/4W J 680 Ω or	RCX4JATZ0681

Ref.No.	Description	Part No.
	CARBON RES. 1/6W J 680 Ω	RCX6JATZ0681
	MISCELLANEOUS	
JK501⚠	CRT SOCKET ISMS02S	JSCC220PK003

Junction A CBA

Ref.No.	Description	Part No.
	Junction A CBA Consists of the following	---------
CN503	CONNECTOR, 11P TUC-P11X-B1	JCTUS11TG001

Junction B CBA

Ref.No.	Description	Part No.
	Junction B CBA Consists of the following	---------
CN573	CONNECTOR, 14P TUC-P14X-B1	JCTUS14TG001

DECK PARTS LIST

Note: There are two different, but interchangeable types of CLEANER LEVER(B359) in this model, and have different combination with B361. Please see Table 1 for details and combination.

Table 1 (B359 and B361 Combination)

B359 CLEANER LEVER		B361
Type	ID No.	ID No.
A	0VM304413	0VM411114
B	0VM305090	Not used

Ref.No	Description	Part No.
B2	CYLINDER ASSEMBLY MK11 NTSC 2HD SQPB	N1428CYL
B3	LOADING MOTOR ASSEMBLY MK11	0VSA12093
B8	PULLEY ASSEMBLY MK11	0VSA12078
B9	MOVING GUIDE S PREPARATION MK10	0VSA11002
B10	MOVING GUIDE T PREPARATION MK10	0VSA11004
B11	LOADING ARM T(B) ASSEMBLY MK11	0VSA12110
B12	LOADING ARM S(B) ASSEMBLY MK11	0VSA12109
B27	TENSION LEVER SUB ASSEMBLY MK11	0VSA12076
B31	AC HEAD ASSEMBLY MK11(TVCR)	0VSA12305
B35	TAPE GUIDE ASSEMBLY MK11	0VSA12069
B37	CAPSTAN MOTOR 288/VCCM011	N9660CMT
B52	CAP BELT MK10	0VM411138
B73	FE HEAD ASSEMBLY MK11 or	N9742FEL
	FE HEAD(MK11) MH-131SF11 or	DHVEC01Z0005
	FE HEAD ASSEMBLY MK11	N9743FEL
B74	PRISM MK10	0VM202870
B121	WORM MK11	0VM412544
B126	PULLEY MK11	0VM412543
B133	IDLER ASSEMBLY MK10	0VSA11017
B148	TG CAP MK11	0VM412972
B300	C DRIVE LEVER R MK11	0VM305068
B303	F DOOR OPENER MK11	0VM203299
B347	GUIDE HOLDER A MK10	0VM304920
B354	SLIDER R MK11	0VM101040
B355	SLIDER L MK11	0VM203296
B359	CLEANER LEVER MK10 or	0VM304413
	CLEANER LEVER MK11	0VM305090
B360	CLEANER ROLLER MK9	0VM410032C
B361	CL POST MK10	0VM411114
B410	PINCH ARM(A) ASSEMBLY MK11	0VSA12064
B411	PINCH SPRING MK10	0VM411092
B414	M BRAKE S ASSEMBLY MK11	0VSA12211
B416	M BRAKE T ASSEMBLY MK11	0VSA12212
B417	TENSION SPG(190265) MK11	0VM412984
B425	LOCK LEVER SPRING MK10	0VM411110
B426	KICK PULLEY MK10	0VM411095
B482	C PLATE MK11	0VM203297
B483	LOCK LEVER MK10	0VM411109D
B487	BAND BRAKE MK10	0VM304416B
B488	MODE LEVER MK11 or	0VM101043
	MODE LEVER(PB) MK11	0VM101112
B491	CAM GEAR(A) MK11	0VM101044
B492	MODE GEAR MK11	0VM305074
B494	DOOR OPENER B MK11	0VM305072
B499	T LEVER HOLDER MK10	0VM304419
B501	WORM HOLDER MK11	0VM305067
B502	CAM GEAR(B) MK10	0VM304403
B505	PSCW(625504) MK11	0VM413288
B507	REEL WASHER MK9 5*2.1*0.5	0VM410058
B508	S BRAKE SPRING MK10	0VM411121
B513	PSCW(752605) MK10	0VM411516
B514	SCREW RACK MK11	0VM412597
B516	REEL WASHER MK9 5*2.1*0.5	0VM410058
B518	P.S.W CUT 1.6X4.0X0.5T	0VM408485A
B520	T BRAKE SPRING MK10	0VM411123
B521	SOFT SPRING MK10	0VM411122
B522	TG POST ASSEMBLY MK11	0VSA12080
B525	LDG BELT MK11	0VM412804
B529	CLEANER ASSEMBLY MK11	0VSA12086
B551	FF ARM MK11	0VM305069
B553	REV SPRING MK11	0VM412555
B555	RACK ASSEMBLY MK11	0VSA12071
B557	MOTOR PULLEY U5	0VM403205A
B558	LOADING MOTOR M31E-1 R14 7351	MMDZB12MM002
B559	CLUTCH ASSEMBLY MK11	0VSA12350
B560	KICK SPRING MK10	0VM411475A
B561	F DOOR SPRING MK10	0VM411430
B562	C DRIVE LEVER L MK10	0VM304408
B563	SLIDER SHAFT MK10	0VM411112
B564	M GEAR MK10	0VM411136E
B565	SENSOR GEAR MK11	0VM305080
B567	PINCH ARM(B) MK10	0VM304396
B568	BT ARM MK10	0VM304417H
B569	CAM HOLDER F MK11	0VM305075
B570	CAM RACK SPG MK10	0VM411102
B571	P.S.W F 6*2.55*0.5	0VM402629A
B572	P.S.W CUT 1.6X4.0X0.5T	0VM408485A
B573	REEL S MK11	0VM203436
B574	REEL T MK10	0VM202872C
B585	PSW(2957505) MK11	0VM412745
L1051	SCREW, B-TIGHT M2.6X6 PAN HEAD+	GPMB9060
L1053	SCREW, S-TIGHT M2.6X8 WASHER HEAD+	GCMS9080
L1151	SCREW, SEMS M2.6X4 PAN HEAD+	CPM39040
L1191	SCREW, S-TIGHT M2.6X8 WASHER HEAD+	GCMS9080
L1321	SCREW, S-TIGHT M3X6 BIND HEAD+	GBMS3060
L1341	SCREW, P-TIGHT M2.6X6 BIND HEAD+	GBMP9060
L1406	AC HEAD SCREW MK9	0VM410964
L1450	SCREW, SEMS M2.6X5 PAN HEAD+	CPM39050
L1461	SCREW, P-TIGHT M2.6X6 WASHER HEAD+	GCMP9060
L1466	SCREW, S-TIGHT M2.6X6 BIND HEAD+	GBMS9060
L1467	SCREW, S-TIGHT M2.6X5 WASHER HEAD+	GCMS9050
L1468	SCREW, B-TIGHT M1.7X12	GAMB7120

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